



Modine Global Supplier Manual





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Section 1.0 - Introduction

Modine Manufacturing Company specializes in thermal management systems and components, bringing highly engineered heating and cooling technology and solutions to diversified global markets. Modine products are used in light-, medium- and heavy-duty vehicles; agricultural, construction, and industrial equipment; heating, ventilation, air conditioning and refrigeration systems; and alternative energy systems. For more information about Modine, visit www.modine.com.



Our Vision

Modine pursues market leadership by being a customer-focused, global company delivering exceptional quality, innovation and value. We will grow our core business of thermal management with superior technical solutions in systems, products and services – coupled with a cost competitive structure.

Our Mission

- To continuously improve the value of our products to our customers through innovation and operational excellence.
- To continuously improve the engagement and capability of our people.

The key to our success lies in our ability to satisfy our customers' needs for heat transfer goods and services.

In order for Modine to continue to be a worldwide leader in heat transfer we must select and work with world-class suppliers. Our suppliers are critical in helping ensure we meet our customer's expectations and remain competitive in today's world market.

Modine is committed to working cooperatively with suppliers to increase the competitive positions of our supply chain. We look forward to a successful long-term relationship with each of our supplier **partners**.

1.1 Supplier Manual Goals & Scope

The purpose of this manual is to communicate Modine's requirements and expectations to suppliers of direct material, tooling, and capital equipment as a standard operating procedure under Global Master Purchase Agreements (GMPA) / Contractual Agreements.

This manual detail the commercial, quality system, environmental system, and logistics requirements for suppliers to Modine. Compliance with this manual is mandatory to ensure that suppliers have the systems, processes and procedures in place to meet necessary requirements of Modine and Modine's end customers.

Suppliers are expected to meet the requirements of the plant(s) they supply. Modine plants are registered to ISO 9001:2015 or IATF 16949:2016, or carry certification specific to the customer and market they serve. Any specific Modine Plant Quality Management System requirements will be communicated by Modine Procurement during the supplier registration and business award process.

This manual will be updated as necessary to include new and changing requirements based on both Modine's and our customers' needs and requirements.

1.2 Code of Conduct - Business Ethics Program & Helpline

Modine has a long history of financial stability, dating back to our founding in 1916. Our business efforts are forged with an eye toward the future and are grounded in the principles of running an accountable and responsible corporation. To help us fulfill our responsibility, Modine has taken additional steps in establishing worldwide methods for employees and suppliers to report any matters they believe may not be in line with Company values or legally acceptable standards. These include the following:

- Business Conflicts of Interest
- Improper use of Confidential Information
- Bribery / Corruption
- Anti-Competitive acts or omissions
- Actual or Threatened Illegal Acts or Criminal Violations
- Environmental, Health or Safety Concerns
- Human Rights Violations – Human Trafficking. Forced Labor and / or Child Labor

Modine has established the Modine Business Ethics Committee ("Ethics Committee"), which is responsible for overseeing all internal investigations regarding matters involving business ethics, and promoting compliance with legal and internal requirements relative to matters of business ethics. The Ethics Committee is available to anyone inside or outside of the company who wishes to make a report.

Please be aware the Ethics Committee will handle all reported matters in a discrete manner, consistent with the best interests of the parties involved and legal requirements.

Suppliers are expected to understand and comply with Modine's Business Ethics requirements. For further information on our Business Ethics program, see www.modine.com and select "About Modine" and then select "Policies".

At Modine, we do business the right way, with no compromise. Our very strong expectation is that our employees and business partners, including our suppliers, voice any concerns to us. To facilitate such communication, we have established a global, 24hour/7day/week Helpline.

The Helpline is available in multiple languages and may be accessed via the internet or through the telephone. For further information on our Helpline, see www.modine.com and select About / Ethics Program Reporting. (The languages are located at the very top of the Helpline page).

1.3 Procurement Policy

Modine is committed to the fair and equitable treatment of our suppliers, providing qualified suppliers the opportunity to grow their business. Supplier confidentiality is maintained by all Modine employees and its authorized third-party representatives to maintain high ethical standards and to support the creation of lasting supplier relationships.

In return, suppliers are expected to:

- Maintain the confidentiality of information provided by Modine
- Conduct business ethically, without attempt to influence through gifts, entertainment, or favors that would create a conflict of interest
- Advise Modine of product and process technology alternatives that would improve the purchase value
- Partner with Modine to produce sustainable products using environmentally sustainable materials and processes.

1.4 Quality Policy

Modine pursues market leadership by being a customer-focused, global company delivering exceptional quality, innovation and value. The key to our success lies in our ability to satisfy our customers with quality goods and services at competitive market prices. This policy is the foundation of Modine's Quality Management System, and every employee is responsible for supporting the following principles to which the Company commits:

- Consistently provide heat transfer products, processes, and services that meet and exceed customer expectations.
- Continuously improve processes that provide products with superior quality. Processes will comply with customer and legal requirements, the requirements of applicable quality and environmental standards, and consider expectations of all interested parties.

To achieve this quality goal, Modine needs supply chain partners with a parallel commitment to exceptional quality, innovation, and value.

1.5 Environmental Policy

Modine is committed to minimize the impact of its manufacturing operations on human health and the environment and to implement improvements for environmental protection that are consistent with the Company's business principles and values. Modine's Environmental Policy can be found at www.modine.com, under the "About Modine" selection. This policy is the foundation of Modine's Environmental Management System and every employee is responsible for supporting the following principles to which the Company commits:

- Take a proactive approach to resolving environmental issues
- Educate and train ourselves to adhere to sound environmental practices
- Consider environmental aspects during product development
- Conserve resources and reduce the use of energy
- Prevent pollution, reduce the use of toxic chemicals and minimize waste
- Fulfill our compliance obligations
- Continually improve our Environmental Management System

1.6 Health and Safety Policy

Modine is committed to minimize the impact of its manufacturing operations on human health and to implement safety improvements that are consistent with the Company's business principles and values. Modine's Health and Safety Policy can be found at www.modine.com, under the "About Modine" selection. This policy is the foundation of Modine's Health and Safety Management System and every employee is responsible for supporting the following principles to which the Company commits:

- Take a proactive approach to resolving health and safety issues to provide safe and healthy working conditions.
- Promote and maintain safety systems and, through a behavior-based approach, achieve personal accountability and responsibility for safety at all levels in the organization.
- Educate and train all employees to ensure appropriate safe practices are followed.
- Implement continuous safety improvements leading to the elimination of hazards, the reduction of injury and illness risks, and achievement of health and safety objectives.
- Fulfill our legal and other health and safety requirements.
- Consultation and collaboration with all employees.
- Continually improve our Health & Safety Management System.

1.7 Trade Compliance Policy

Modine recognizes that failure to meet trade compliance requirements can have serious consequences for Modine, including damage to the company's reputation, monetary penalties, and suspension/revocation of the company's exporting or importing privileges with a resulting negative impact to our suppliers and customers. Thus, we are committed to the implementation, maintenance and continual improvement of a robust global trade compliance program which integrates compliance activities into our Modine and Modine Supplier Management business processes. The details of Modine's Trade Compliance Policy can be found at www.modine.com under the "About Modine" selection. Additional information on Modine Supplier Trade Compliance Requirements can be found in Section 6.1 of this manual.

1.8 Anti-Fraud Policy

Modine is committed to the highest standards of moral and ethical behavior by its employees, suppliers, customers and partners. The Modine Anti-Fraud policy is established to facilitate the development of controls that will aid in the prevention and detection of fraud against Modine. Modine intends to promote consistent organizational behavior by providing guidelines and assigning responsibility for the development of controls and conduct of investigations. The details of Modine's Anti-Fraud Policy can be found at www.modine.com under the "About Modine" selection.

1.9 Anti-Corruption Policy

Modine is committed to comply with the anti-corruption laws to which the Company is subject, including the U.S.'s Foreign Corrupt Practices Act (the "FCPA"), the U.K.'s Bribery Act 2010 (the "Bribery Act") and/or any other anti-corruption law (together the "Acts"). Depending on business circumstances, these Acts can apply to our activities across the globe, despite the fact that a law is enacted by one country, and the activities occurred in another country. It is Modine's policy that all business dealings be based solely on sound business decisions and fair dealing. Additional details on Modine's Anti-Corruption Policy can be found at www.modine.com under the "About Modine" selection.

1.10 Gifts & Entertainment Policy

Our employees and directors must avoid improper personal benefits for themselves, their family members or other third parties that result from their association with Modine. In addition, our employees and directors may not offer or accept Gifts or Entertainment that might appear to have the intent or prospect of influencing the recipient's business decision-making. Additional details on Modine's Gifts & Entertainment Policy can be found at www.modine.com under the "About Modine" selection.

1.11 Positive Work Environment Policy

Modine requires a working environment free of threats or acts of physical violence against other employees, vendors, customers, visitors, or Company property. It is explicitly against our policy to bring weapons onto Company property or to any Company functions, except as explicitly permitted in other written company policies in accordance with local laws.

Any inappropriate or discriminating conduct, whether verbal, physical, or visual, that is based upon an individual's race, color, religion, national origin, gender, sexual orientation, age, disability, gender identity, marital status, veteran status, citizenship or other protected group status will not be tolerated by Modine.

Modine requires a working environment free of harassing or bullying behavior by our employees, vendors, customers, visitors. This includes behavior outside of the workplace, such as on business travel or at work-related meetings or social functions.

Modine strictly prohibits the trafficking of persons, the use of forced labor, or the procuring of commercial sex acts. Additionally, the United States Government has adopted a zero tolerance policy regarding Contractors and Contractor employees that engage in or support severe forms of trafficking in persons, procurement of commercial sex acts, or use of forced labor, as more fully set out in the United States's Federal Acquisition Regulation (FAR) 52.222-50(b).

Modine is committed to continuous safety improvement resulting in the prevention of injuries and illnesses and the establishment of safe and healthy working conditions. Modine will insure a working environment free of drugs.

Additional details on Modine's Positive Work Environment Policy can be found at www.modine.com under the "About Modine" selection.

1.12 Data Protection Policy

Modine is committed to comply with the data privacy laws to which Modine is subject (collectively the "Data Protection Laws"). Modine promotes compliance with the Data Protection Laws for the processing of Personal Data, in particular taking into account the requirements set out in the European Union's General Data Protection Regulation ("GDPR"). The GDPR is one of the "Data Protection Laws". Modine's Data Protection Policy can be found at www.modine.com under the "About Modine" selection

1.13 Conflict Minerals Notice

In July 2010, the United States passed the Dodd-Frank Wall Street Reform and Consumer Protection Act. Part of that law requires all U.S. public companies to make certain disclosures regarding their purchase and use of so-called “Conflict Minerals” (Tin, Tantalum, Tungsten and Gold). The intent of the Act is to draw attention to the use of minerals mined in the Democratic Republic of Congo or adjoining regions, which directly or indirectly benefit armed groups that are responsible for severe human rights violations, and encourage U.S. companies to cease any use of Conflict Minerals originating from this region. Modine is committed to sourcing components and materials from suppliers that share the values expressed in our code of ethics, which includes the respect of human rights which is a foundation of the Conflict Minerals Act.

To assist Modine in its efforts to comply with the requirements and spirit of this Act, Modine expects the following of all its suppliers across the globe:

- To commit to being or becoming “conflict free” by sourcing Tin, Tantalum, Tungsten and Gold from conflict-free smelters only.
- To complete an EICC-GeSI declaration certifying the supplier’s conflict-free status and provide supporting documentation on the countries of origin of any tin, tantalum, tungsten and gold that it purchases for Modine.
- In support of this conflict free declaration, to obtain declarations and evidence from all sub-suppliers in their supply chain and be prepared to share this evidence upon request from Modine.

Suppliers that fail to comply with these requirements may be subject to new business hold.

Modine expects all its suppliers to be compliant with any globally applicable regulation, law or directive with respect to conflict minerals requirements.

For additional detail on Modine’s Conflict Minerals Supply Base declaration requirements, please see <http://www.modine.com/web/en/suppliers.htm>. Modine’s Conflict Minerals Policy can be found at www.modine.com, under the “About Modine” selection.

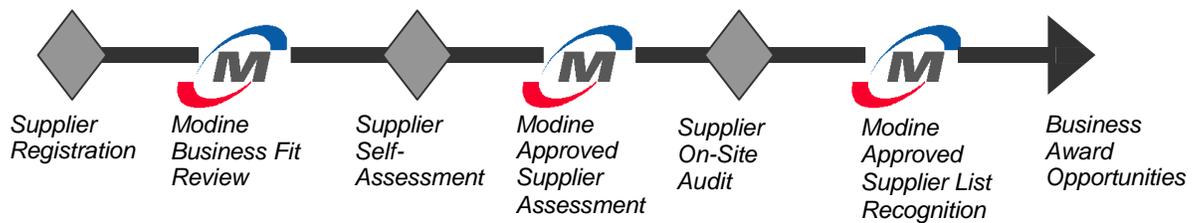
Section 2.0 – Doing Business with Modine

Modine seeks long-term relationships with supplier partners who share our goal of creating a sustainable high value supply chain to support our customers and the end user market. This value focus includes Procurement the right technology components and materials, delivered on-time and with high quality, and an ongoing drive for continual improvement.

As a manufacturer of vehicular heat exchangers and building heating, cooling, and ventilation systems, Modine purchases materials and components in the following commodity groups.

<u>Raw Materials</u>	<u>Metals Fabricated</u>	<u>Petro Chemicals</u>
Aluminum Coil & Sheet Carbon Steel Bars & Plates Bi-Metal Plate Brass Plate Braze Paste & Solder Stainless Steel Coil & Plate Copper Coil & Plate Resin Paint & Related chemicals	Tubes – Welded & Extruded Tubes – Formed & Bent Stampings Stamped Assemblies Machined Components Fittings Fasteners & Hardware Authorized Distributors	Gaskets, O-rings Grommets and Isolators Hoses Radiator Tanks Fan Shrouds Coolant Reservoirs Caps & plugs
<u>Castings</u>	<u>Complex Assemblies</u>	<u>Electronic Devices</u>
Aluminum Brass & Bronze Grey & Ductile Iron Stainless Steel Magnesium	Compressors Heat Exchangers HVAC Components	Motors/Blower/Fans Electrical Controls Sensors Wire Harnesses

Supplying to Modine begins with your registering with the Modine Procurement Group by providing overview information on your company capabilities.



2.1 Supplier Registration Process – Becoming a Modine Approved Supplier

Visit the Modine internet website <http://www.modine.com/web/en/suppliers.htm> and select BECOME A SUPPLIER to access the New Supplier Interest Form. Please complete this electronic form and the information entered will be transmitted to the appropriate Modine Regional Procurement organization for review and response.

2.2 Supplier Self-Assessment

Following your supplier registration submission, Modine Procurement will review the information provided and respond with feedback on the next steps which may include completing a New Supplier Assessment in [Section 10.0](#) designed to provide additional information to allow Modine Procurement and Quality to understand your business, the fit with Modine's needs, and to initially assess your company's capabilities.

Modine uses a web-based eSourcing tool application for registering new suppliers, maintaining supplier information and for conducting new business sourcing activities. Depending on your region of operation and business units, Modine may require that Suppliers complete the New Supplier Assessment in this web-based eSourcing tool application.

2.3 Modine Approved Supplier Assessment

Following the supplier submission of the supplier New Supplier Assessment, Modine Procurement and Quality will review these documents and contact you regarding the next steps in the process to becoming an approved supplier.

2.4 On Site Review

Modine Procurement, Quality, or a Modine authorized third party representative may request an onsite review, according to VDA 6.3 requirements, at your facility to confirm the New Supplier Assessment information and readiness for Modine production business. If the assessment leads to multiple open points to be closed, Modine may engage an authorized third party to support the closure of these open points. The cost of the third party to be mutually agreed upon.

2.5 Non-Disclosure Agreement

If recommended to proceed, you will be requested to sign and return a Non-Disclosure Agreement to allow for the open exchange of Modine confidential information associated with the new business requests for quotation (RFQ).

2.6 Sanctions and Anti-Corruption Due Diligence

To ensure compliance with applicable sanctions and anti-corruption laws, suppliers will be screened by Modine through a due diligence database provided by a third party. Suppliers must provide a complete and accurate company name, as well as any additional necessary information requested by Modine, so that Modine can effectively use the due diligence database.

2.7 Financial Health Review

In some instances, relating to significant business awards or concerns over the supplier's financial health, Modine may initiate a supplier financial health review. As a supplier to Modine you will be expected to support these financial reviews with Modine and/or Modine's Financial Analysis agent by providing the requested company financial data or metrics to support the assessment of your companies underlying financial health.

2.8 Approved Supplier List (ASL)

New Suppliers who successfully complete the assessment process and onboarding will be recognized as an approved supplier to Modine Manufacturing and will be eligible for new business awards. Modine Procurement will include approved suppliers in quote opportunities for new programs that are within the supplier's product and manufacturing

capabilities.

Modine Approved Suppliers awarded production business will be reviewed on an ongoing basis for quality and delivery performance, technical capability, quality/environmental system certifications and commercial support. For details on the Supplier Scorecard Process and business sourcing implications, see [Section 7.0](#) of this Manual.

Supplier requests for Modine credit status should be directed to your respective Modine Procurement Buyer.

Modine uses a web based eSourcing tool application for sourcing and supplier relationship management (SRM). It is the supplier's responsibility to maintain their company profile, organizational details, and business certificates (ISO/IATF, NDA, regional business licenses, etc.) in this web-based SRM system.

2.9 Supplier Communication of Organization or Business Status Changes

Suppliers are required to inform Modine about significant organizational and/or business changes (e.g. change of management level personnel, business ownership, restructuring, or insolvency), as well as changes in personnel in the suppliers' quality department before the change is implemented. This information should be communicated in writing directly to your Modine Procurement or Quality representative.

Section 3.0 - Commercial Policies and Procedures

As a supplier to Modine, you can expect to be treated with respect and have transparency into our business needs so that our supply chain can be successful. In parallel, we expect transparency from our suppliers in terms of technology, cost, quality, financial, and operational stability. We can only be successful as long-term partners if we have a shared goal of success.

3.1 Terms & Conditions

Modine's Terms and Conditions serve as the foundation of our supplier business agreements. In specific regions, local laws may dictate unique terms which are included in the regional T&C documents. Please see Section 10.0 Reference Documents of this manual or contact your regional Modine Procurement Group to obtain a copy of the applicable Terms and Conditions documents to ensure that you are aware of and agree with the requirements in your region.

In some circumstances, local exceptions to the standard Terms and Conditions may be agreed upon by a member of the Modine Procurement Management team. Any exceptions must be documented and signed by both Modine Procurement and the supplier's management or commercial representative to maintain an ethical and transparent relationship.

3.2 Supplier Warranty Agreements

As a supplier to Modine, you are required to warrant your products such that they will be free from defects in material and workmanship and that they comply with the Modine specifications and requirements unless any specific warranty agreement exists between Modine and the supplier. If there is a field failure of a Modine fabricated part due to a supplier's component, the supplier will be expected to participate in problem resolution reviews with Modine and Modine's customer. If the failure is determined to be attributable in whole or in part to the supplier's product, the supplier will negotiate in good faith for the payment of their appropriate share of warranty costs to Modine and, if applicable, Modine's customer. Warranty responsibility shall be applicable as dictated by local law or by a specific Modine Supplier Warranty Agreement signed in conjunction with the Modine business award. The Modine Supplier Warranty Agreement provides specific Terms and Conditions associated with warranty time, warranty coverage's, product failure analysis, and warranty expense recovery processes that are required by Modine and Modine's customer.

3.3 Procurement Process

As an Approved Supplier to Modine, you will be considered for all product sourcing opportunities within your product or material supply capabilities. In some instances, Modine Procurement and Engineering may omit an approved supplier from a quote opportunity due to specific design, technical requirements or capacity considerations. Modine Procurement will make every effort to communicate the rationale for these sourcing decisions with our suppliers.

Modine Procurement is the only official supplier channel for submitting and executing commercial agreements. Suppliers should be vigilant to include the appropriate Modine Procurement buyer in all commercial communications.

3.3.1 Request for Quotation Process (RFQ)

Suppliers should expect to receive Requests for Quotation's (RFQ's) from Modine Procurement with all necessary information to allow the supplier to develop and provide an accurate price quote response. In the event a supplier has questions or requests clarifications on the RFQ details, the supplier should contact Modine Procurement for clarification. Modine expects that any information provided in the RFQ will be treated as proprietary and confidential.

Modine uses a web-based eSourcing application for registering new suppliers, maintaining supplier information and for conducting new business sourcing activities. Suppliers may be instructed to respond to RFQ's in this web-based eSourcing application.

3.3.2 Supplier Technical Feasibility Commitment (STFC)

As part of the RFQ process, Modine may require that the supplier conduct a Supplier Technical Feasibility Commitment (STFC) review to ensure that the supplier's Engineering, Manufacturing, and Quality personnel clearly understand the Modine product requirements and have validated their capability and capacity. This STFC is a critical milestone in the Modine Advanced Product Quality Planning (APQP) process and a prerequisite to sourcing. Additional information on the STFC process can be found in [Section 5.2.1](#) of this manual. STFC review and sign off shall ensure safe product launch with zero defects by suppliers.

3.3.3 Cost Transparency

For Modine and our supply chain partners to be successful, we must operate with a level of trust that allows for the transparent sharing of cost detail supporting the supplier's quote response. The minimum level of cost element information required includes:

- Material Cost
- Direct Labor Cost & Hours
- Variable Overhead Costs
- Fixed Overhead Costs
- Tooling Cost

Modine expects suppliers to provide detailed cost break down with RFQ's using the format in the Modine web based eSourcing software.

Modine will treat this information as confidential to be used solely for discussions with the submitting supplier as a tool for reaching a commercial agreement. Additional cost element detail may be required in the supplier RFQ response. A failure to provide the requested cost detail may result in the supplier being removed from consideration for sourcing.

3.3.4 Supplier Selection

Following the analysis of the RFQ responses from the approved suppliers, Modine Procurement, Engineering, Manufacturing, Plant Quality, Logistics, and Supplier Quality Assurance will jointly make a supplier selection based upon criteria including:

- Product or Material Technical Evaluation
- Supplier Technical Feasibility Commitment (STFC)
- Supplier Technical Capability & Support

- Manufacturing Capability & Capacity
- Supplier Financial Health
- Quality performance
- VDA 6.3 process audit score performance > 80% and minimum of “B” grade.
- VDA 6.3 potential analysis minimum “yellow” result.
- Product Price, Cost and Commercial Terms
- Logistics Costs (Freight & Duty)

All suppliers participating in a RFQ will be notified in a timely manner upon completion of the sourcing process and will be provided feedback on the sourcing rationale and improvement opportunities.

Modine will expect suppliers to use Advanced Product Quality Planning disciplines to manage their product development and projects associated with new engineered parts or processes. Refer to [Section 5.0](#) of this manual for additional details on Modine’s expectations for supplier support and program management of awarded business.

3.4 Continuous Improvement Expectations

Suppliers must be cost competitive on a global basis and are expected to meet annual cost reduction objectives established by Modine. Suppliers shall strive to make their operations more efficient and share those savings opportunities with Modine. This may be in the form of formal cost reductions for one year or multi-year agreements. Savings goals will be communicated at the time of business award and/or through annual discussions with your Modine Procurement representative. Suppliers are encouraged to identify and propose cost reduction ideas on current business which would be credited toward their cost reduction objectives. Proposed ideas may relate to any aspect of the supply chain, including design and material changes, packaging improvements, logistics improvements, etc. Suppliers should work with their Modine Procurement representative to understand the required cost objectives. Support for the Continuous Improvement process is one of the metrics used in Modine’s Annual Supplier Scorecard process as outlined in [Section 7.0](#) of this manual. Non-participation in this program by suppliers will lead to non-preferred supplier status which could result in low business growth with Modine.

Any product or process changes, including those associated with a cost reduction, must be approved by Modine Procurement and Engineering prior to implementation and should be communicated to Modine in accordance with the Change Management process as discussed in [Section 5.4](#) of this manual.

3.5 Equipment, Tooling & Gauging Requirements & Expectations

Modine has established the following guidelines and recommendations related to Capital Equipment, Tooling and Gauging RFQ’s:

- The Supplier has the sole responsibility for completing the design, build and tryout of all tooling/equipment being quoted per the specifications that are provided. Design approvals or sign-offs by Modine representatives do not alleviate the supplier of this responsibility.
- It is a Modine policy that no work be started by the Supplier without a Modine Purchase Order or a letter of intent originating from Modine Procurement. Accordingly, Modine Procurement is the only Modine group authorized to place a project on hold or to cancel the project.

- The Supplier guarantees completion of tools/equipment by completion date shown on the quote, unless agreed to previously in writing by Modine Procurement.
- Engineering change costs must be agreed to by the responsible Modine engineer and/or Program Manager assigned to the program. No engineering changes should be started without an amended Purchase Order, specifically addressing the change. All requests for cost changes or delivery delays must be submitted to Modine Procurement with sufficient detail to support the request. The Supplier should make every effort to maintain the committed program timing while negotiating change cost approval.
- All machines must meet or exceed the requirements shown on the Modine specification. This includes cycle times.
- All dies and fixtures must meet or exceed the referenced Modine specs.
- For capital equipment quotes, any work holding fixtures/tooling must be shown as line item detail on the supplier quote. Work holding fixtures/tooling is anything that touches the part.
- All quotes must be submitted with detailed cost breakdowns for all major components in the following categories:
 - Tooling quotes for all fixtures, tooling, and gauges must be shown in line item detail
 - Soft Costs
 - Engineering costs
 - Design costs
 - Costs specifically allocated to “specialized equipment”
 - Hard Asset information and cost to aid in lease analysis options
 - Robots - include manufacturer and model number
 - Material handling devices or systems - include manufacturer and model number
 - Electronics Process Controllers, Control Panels - include manufacturer and model number
 - Testing devices - include manufacturer and model number
 - Installation & Shipping costs

3.5.1 Tooling Management Program

The proper control and maintenance of tooling used to manufacture parts for Modine is critical to our success. Whether the tooling is owned by Modine or one of our customers, suppliers shall exercise good manufacturing practices to ensure the viability of tooling throughout its life. At a minimum, suppliers shall adhere to the specifications detailed below for Modine-owned and Modine Customer-owned tooling. Requirements beyond those listed here may be detailed on the Purchase Order.

- Tooling Covenants
 - Where practical, the tooling shall have a permanently affixed identification plate with the following information:
 - "Property of _____"
 - Modine identification number (T#)
 - Customer Identification number (to be provided by Modine)
 - Asset #
 - Weight
 - Mfg. date

- For suppliers to Modine Europe; Please comply with [Factory Standard ME 95022 European Tool Marking](#) (See Section 10.0 of this manual) for specific guidelines on tooling management. If an identification plate cannot be affixed to the tooling, the information must be affixed to the storage area or container for the tooling.
- Modine China requirement on tool marking per SHANCN 06-1-02-01 Supplier PPAP package format
- The supplier is expected to maintain tooling for a minimum of fifteen (15) years after serial production ends at the supplier's expense. Any deviation to this requirement must be authorized by Modine Procurement.
- Part shall be dimensionally correct over the life of the tooling unless otherwise agreed to with Modine.
- Part(s) produced from the tool cannot be sold to another customer without written approval from Modine Procurement.
- Payment conveys ownership and right for Modine, or Modine's customer to remove the tooling.
- Modine Procurement written approval is required prior to disposing of or permanently disabling any tooling.
- Modine Procurement written approval is required prior to modifying any tooling.
- Supplier must conduct preventive maintenance on tools at the supplier expense.
- Tool storage - Supplier must separate and keep apart from production tooling or Seller's property. Tooling shall be protected from the elements and damage and stored in a fire protected area.
- The tooling supplier and/or supplier facility using the tooling must have insurance coverage paid by supplier.
- Modine and/or Modine's Customer may enter the supplier's plant to inspect tools and tool records. The supplier should make all efforts to facilitate the visit in a timely manner.
- Tool Relocation – Modine written authorization is required to move tooling to another facility. The supplier must provide a detailed move plan, including the buildup of part inventory, successful completion of product validation testing, process capability studies, and overall Production Part Approval Process (PPAP) requirements to ensure no part supply disruption to Modine or Modine's customers. This plan must be approved by Modine Procurement and Manufacturing and any move or inventory costs are the responsibility of the supplier requesting the tooling move.
- Tooling Payment and Production Part Approval Process (PPAP) Requirements
 - Tooling progress payment invoices should be submitted to the Modine Accounts Payable group and must include a Tool Inventory Sheet (See an example Template in [Section 10.0](#)). The Tool Inventory Sheet includes tooling pictures and a description of the tooling. Your Modine regional Procurement buyer may provide additional directions or a regional Tool Inventory template as part of the New business RFQ process.
 - Final tooling payment will be issued following the Modine PPAP Approval. Suppliers must provide a copy of the Modine approved PPAP with their final payment invoice to Modine Accounts Payable. Final payment will not be made without the Modine approved PPAP documentation and a Tooling Inventory Sheet.

Section 4.0 - Quality

4.1 General

Modine expects its suppliers to achieve and demonstrate a Zero PPM and NCR commitment to quality in their day to day business. This means that the supplier's entire management team is committed to implementation of quality management processes that support a quality culture - every process, every day.

Modine requires that serial production suppliers to Modine's vehicular business segment have a Quality Management System (QMS) registered to a minimum of ISO 9001:2015 or IATF 16949:2016. Suppliers delivering product that is used in automotive applications are expected to maintain a QMS that is compliant with IATF 16949:2016 per clause number 8.4.2.3 or to Automotive MAQMSR requirements.

Modine prefers suppliers for Industrial business segments be ISO 9001:2015 certified. When this is not obtained, suppliers are expected to have equivalent quality systems and capabilities to support the supply of quality components to Modine's Industrial plants. Specific quality system requirements for these suppliers will be communicated during the supplier onboarding.

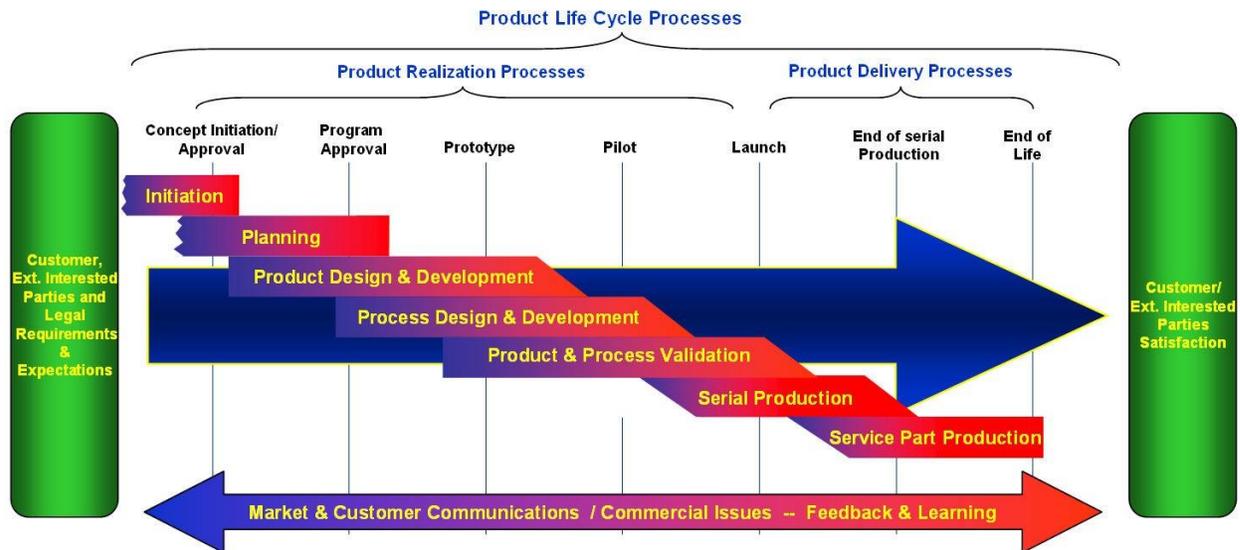
Below are the qualification criteria to become a Modine global approved supplier and be considered in global sourcing strategy. This applies to new and existing suppliers:

- Vehicular Automotive Business Segment - Minimum ISO 9001:2015 quality system certification with a time plan to evolve to IATF 16949:2016 quality system certification or Automotive MAQMSR requirements. Or IATF 16949:2016 quality system certification bearing the accreditation mark of a recognized IAF MLA member.
- Industrial Business Segment – Modine prefers suppliers for Industrial business segments to be ISO 9001:2015 certified.
- VDA 6.3 process audit with minimum > 80% and "B" Grade level.
- Experience in exports and the capability to address Modine's logistics needs.
- Not on any escalation status under Modine performance monitoring.
- Good English communication skills particularly in Sales, Engineering and Quality groups.

All suppliers shall adhere to the requirements of the applicable standards and the requirements stated in the Modine Global Supplier Manual.

It is the responsibility of each supplier to provide Modine Procurement with an up to date copy of their ISO 9001:2015 or IATF 16949:2016 certificate. Updated quality certifications may be sent directly to the regional Modine Buyer or if applicable or uploaded into the Modine eSourcing application tool SRM portal.

These quality expectations are required to support the Modine Product Life Cycle Process.



4.2 Documentation Requirements

The supplier shall maintain current applicable documentation relating to Modine businesses including but not limited to:

- ISO 9001:2015 or IATF 16949:2016
- AIAG Core Tools
 - Advance Product Quality Planning (APQP) and Control Plan
 - Measurement System Analysis (MSA)
 - Production Part Approval Process (PPAP)
 - Potential Failure Mode and Effects Analysis (PFMEA)
 - Statistical Process Control (SPC)
- VDA Core Tools
 - VDA Joint Management System in the Supply Chain - Maturity Level Assurance for New Parts
 - VDA Volume 2: Production Part Approval
 - VDA Volume 4: Quality Assurance prior to Serial Application - Product and Process FMEA
 - VDA Volume 3.1: Ensuring reliability of car manufacturers and suppliers - Reliability Management
- Applicable and Referenced Industry Standards
- Applicable and Referenced Modine drawings and specifications

4.3 Supplier Quality Management Requirements

This section provides suppliers with the Modine specific QMS requirements that are related to IATF 16949:2016 and other relevant international standards. Modine expects the supplier has developed internal processes that comply with the basic requirements as well as the Modine specific requirements. See [Appendix A](#) of this manual for a tabular summary of the Modine specific QMS IATF 16949:2016 requirements.

4.4 Nonconforming Product

The supplier's effective reaction to quality concerns or nonconformance is critical to containing the defect at the supplier or Modine's facility, and therefore avoiding the defect

from impacting the downstream customer. Suppliers are expected to improve their quality performance every year in the areas of nonconformance PPM and NCR incidents.

4.4.1 Nonconformance Documentation

Suppliers will be notified by Modine plant quality or central quality when nonconforming product is found. Nonconforming material may be identified during receiving inspection, manufacturing, reliability testing, warranty analysis, or through customer notification.

Nonconforming product identified at the Modine manufacturing facility will be documented using the Nonconforming Material Report (NCR). The NCR will identify the part number and description of the product, the nonconforming quantity, and the disposition. The NCR will be sent to the supplier for action and response to Modine using a Corrective Action Report - 8D as described below.



Suppliers are required to respond to requests for corrective action using an 8-Discipline Problem Solving Report (8D) via the Modine Global 8D web based reporting tool available at www.modine.com/supplier.

Suppliers who fail to submit comprehensive 8D reports may be escalated through the defined escalation levels, see section 7.4.

4.4.2 Supplier Quality Non- Conformance Response Expectations

Suppliers are required to submit and implement a containment plan within 24 hours (or sooner depending on the situation and customer supply status) of problem notification using the 8D problem solving methodology. Early containment is critical and Modine expects suppliers of nonconforming product will take extraordinary efforts to ensure effective containment of the concern at the supplier's facility and will work with Modine to assist in preventing product from reaching Modine's customer. Rapid response to nonconformance issues is key criteria in Modine's Supplier Scorecard process outlined in section 7.0 and can be a major factor in determining new business sourcing.

Following containment, the supplier should work to identify the root cause of the nonconformance within 2 weeks and make changes in product or process to prevent recurrence. The supplier is expected to provide timely updates to the 8D through the web based 8D reporting tool (available at www.modine.com/supplier) until the permanent corrective action is implemented. Delay in response of proper analysis and corrective action can lead to commercial impact as mentioned in [Section 4.4.3](#).

Any changes to the supplied product or process must be communicated to and approved by Modine plant quality to facilitate disciplined change management. (refer to [Section 5.4](#) of this manual)

Modine may request that the supplier participate in meetings at the Modine facility, or Modine's customer facility to review the 8D actions. Likewise, Modine representatives may visit supplier's facility to discuss the 8D and audit the product/process changes.

4.4.3 Cost of Poor Quality (COPQ)

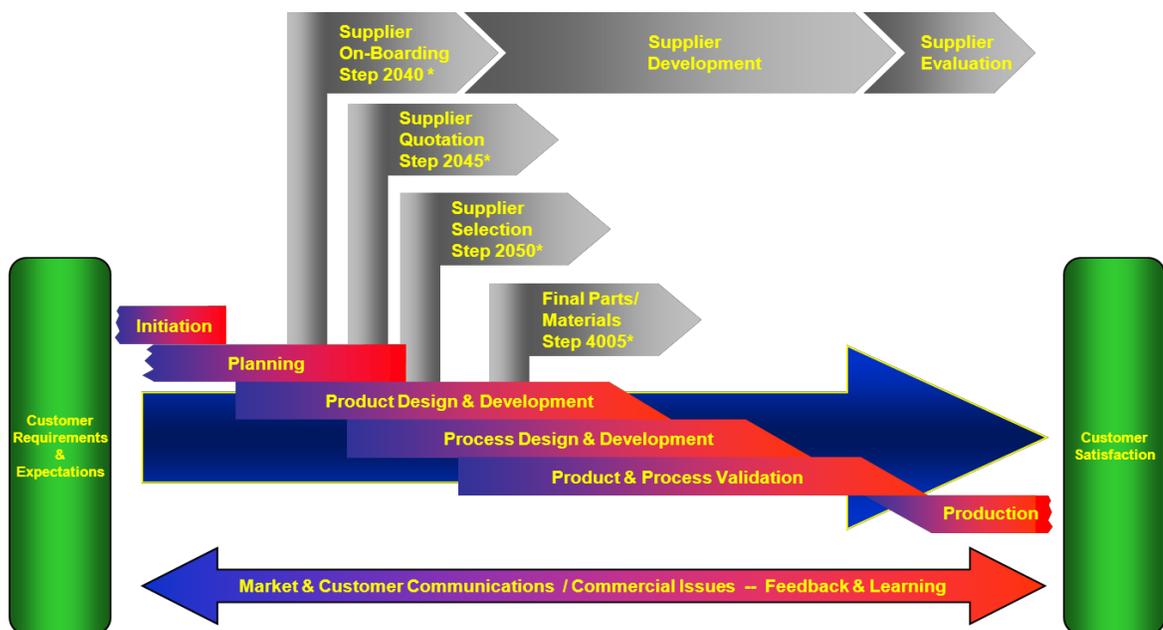
An administrative fee and other related costs incurred may be assessed to the supplier to capture Modine’s cost for managing the supplier nonconformance. A Return Material Authorization number or supplier equivalent will be requested from the supplier for debit authorization of onsite scrap, rework, sort, or return of nonconforming product.

Cost Recovery Instances	Associated Cost Charged to the Supplier
Non Conformance Report (NCR) generation	\$250 USD per occurrence. For other regions at an equivalent appropriate local currency.
Delay in 8D response. Lack of closure beyond 4 weeks or agreed upon timing.	\$100 USD per week of delay. For other regions at an equivalent appropriate local currency.
Sorting by Modine factory performed internally	Actual work and administrative costs incurred according to the valid cost rate of the respective Modine factory.
Sorting by Modine assigned third party	Actual external work costs according to evidence and administrative costs according to the valid cost rate of the respective Modine plant or third party.
Expedited Freight	The difference between expedited freight and standard freight charges.
Incorrect carrier was utilized	The difference between specified and utilized carrier freight charges.
Rework and/or Scrap	Actual labor and material cost incurred.
Late deliveries resulting in the following:	
• Plant shutdown	Actual costs incurred
• Plant rescheduling	Actual costs incurred
• Overtime	Actual costs incurred
No advanced shipping notice (ASN) received (applies to North America only)	A minimum fixed cost of \$100 USD per occurrence. For other regions at an equivalent appropriate local currency.
Non-conforming material resulting in line speed reduction	Actual costs incurred
Increased inspection	Actual costs incurred
PPAP rejections (D0 8D will be opened in Prism Portal)	\$250 USD For other regions at an equivalent appropriate local currency.
Return freight for rejected product	Actual shipping cost incurred
Modine’s customer warranty claims due to the failure of supplier’s product	Warranty expenses incurred by Modine and described in Modine’s Supplier Warranty Agreement, Terms and conditions, or another applicable document.

Section 5.0 – Support of the Product Realization Process

Modine strives to make early sourcing decisions to allow for early supplier involvement in the Product Realization Process. Suppliers awarded business are expected to commit resources to product realization activities with Modine Engineering and to apply Advanced Product Quality Planning (APQP) disciplines within their own organization and their supporting supply chain to ensure a high quality on-time product launch.

Modine Suppliers play a key role in Modine’s Product Realization Process called Modine APQP.



* Refers to Modine APQP Steps as defined in SP02-7 / Modine APQP Program Mgmt. Process

5.1 Supplier Approval

The process for becoming an approved supplier to Modine is outlined in Section 2.0 – Doing Business with Modine, and culminates with the supplier being recognized on the Modine Procurement Approved Supplier List (ASL). Approved Suppliers are qualified for consideration for new business sourcing opportunities within their commodity group (castings, stampings, etc.) and based on their level of certification (e.g. – ISO 9001:2015, IATF 16949:2016, etc.). The following section outlines the process for supplier selection for specific business awards.

5.2 Supplier Selection

Modine Procurement Buyer, Regional SQA’s, Plant Quality Personnel, and Product Engineers are the primary participants in the supplier selection process as outlined in Section 3.3.4 of this Manual.

Additional attention and emphasis will be placed on “High Risk Critical” suppliers or components that are defined by the following criteria:

- New Suppliers
- Suppliers of a resourced part number with history of defects
- Suppliers of newly engineered components for new products or technologies
- Suppliers that have a history of recurring problems
- Suppliers with no experience with similar products
- Complexity of the Product (e.g. new engineered components for new products, new materials or new manufacturing processes)
- Suppliers that haven’t produced production parts for Modine for a long period (e.g. more than one year)
- VDA Volume Product creation – Maturity level assurance for new parts - Risk Classification A rated parts (as required by selected Modine customers)

Modine SQA and Procurement, together with other Engineering and Quality personnel, will take an active role in the management of suppliers or components, especially in case of High Risk suppliers or parts. This includes the coordination and facilitation of the following activities:

- Supplier Technical Feasibility Commitment (STFC) - completed prior to sourcing
- Supplier APQP status tracking
- Production Readiness Reviews (PRR’s) and Production Trial Runs (PTR’s)

Quality personnel (e.g. Regional SQA’s, Plant Quality Managers) will take responsibility for communicating Customer Requirements including Customer Specific Requirements “CSR”, PPAP requirements, Pass-Through Characteristics (PTC), PFMEA "severity" information, lessons learned, defect information, and supplier dock audit requirements as appropriate. Suppliers are expected to aggressively pursue this information and any other information they view as necessary for the success of the program.

5.2.1 Supplier Technical Feasibility Commitment (STFC)

Modine Procurement and Engineering (Application, Program Management, Supplier Quality) may require suppliers to complete a Supplier Technical Feasibility Commitment (STFC) prior to sourcing to ensure that the supplier manufacturing and quality engineers clearly understand Modine requirements and have validated their capability and capacity. Corrective action plans may be required from the supplier to support a sourcing decision.

The STFC is intended to be an interactive review with the supplier and Modine technical personnel to ensure that the supplier’s Manufacturing and Quality Engineers clearly understand Modine’s requirements. This process also validates the supplier’s capability and capacity to achieve zero defects to Modine’s plants. The STFC discussion also serves as a key communication step for the supplier to highlight risks or feasibility improvement opportunities to Modine to increase the likelihood of a successful program. The STFC could be conducted at the supplier’s manufacturing facility to maximize the supplier’s organization involvement and Modine’s understanding of the supplier’s capability.

The Modine STFC template is available for download in [Section 10.0](#) of this manual.

5.3 Advanced Product and Quality Planning (APQP)

The Modine APQP process ensures the supplier utilizes adequate planning to support the development and launch of parts and materials. Modine requires Vehicular suppliers to use the Automotive Industry Action Group (AIAG)'s "Advanced Product Quality Planning and Control Plan" discipline or an equivalent supplier-developed APQP process (validated by Modine SQA or Plant Quality Management). Modine has developed an APQP Supplier reporting template that may be used for reporting the supplier's status to Modine. This document can be obtained in [Section 10.0](#) of this manual.

Modine expects that Suppliers will enforce the usage of APQP disciplines with their sub-suppliers and will provide Modine visibility to their supporting supply chain and the supply chain APQP status.

5.3.1 Product/Process Design & Development

The Purchase Order, Drawings (CAD, 3D Models, and electronic images) and Specifications provided by Modine Procurement to the suppliers is the basis for the development and manufacturing of parts and materials sourced to the supplier.

Suppliers to Modine are expected to demonstrate capability and adherence to industry recognized product and process development disciplines such as Failure Mode and Effects Analysis (FMEA) wherever applicable.

The Design Failure Mode and Effects Analysis (DFMEA) should be developed early in the APQP Product Design & Development phase by suppliers with design responsibility for the product being supplied. The Process Failure Mode and Effects Analysis (PFMEA) should be developed early in the APQP Process Design & Development phase. A single engineer can be in charge of preparing the PFMEA, but a team of qualified individuals must provide input.

DFMEA's and PFMEA's are important in the following situations:

- New designs and/or manufacturing processes, e.g. As a base for creation of the Control Plan
- Changes to existing designs where field history warrants an understanding of potential design and process interactions
- Use of an existing design or process in a new environment, location, or application where performance of the product or process is not fully understood
- Ongoing continuous improvement efforts can result in the elimination of potentially significant quality risks

Information about the creation of a FMEA can be obtained by referring to the latest revision of the Automotive Industry Action Group's (AIAG) and the Verband of the Automobilindustrie (VDA) FMEA Handbook.

Modine may request to review the supplier DFMEA and PFMEA documentation. This review may be conducted at the supplier's facility if necessary to respect the confidential nature of these documents.

5.3.2 Special Characteristics

Special characteristics may be identified by Modine, the supplier, or both. Modine specified special characteristics on drawings or specifications shall be identified on all supplier produced documents (FMEA, Control Plans, operator instructions, etc.). Special characteristics may be product characteristics or process parameters.

Modine special characteristics may be identified by:



CHARACTERISTICS AND CONTROL FACTORS – MODINE SPECIFIC APPLICATION

Special Characteristics Category	Symbol	Protect against	Example
Major	<MC>  	Product fit and function Issues	Mounting feature location & tolerance imposed by customer to make sure assembly into vehicle without issues

MAJOR CHARACTERISTICS <MC>

Definition: Special Characteristics, which are primarily product and part characteristics that affect subsequent operations or product fit / function are called MAJOR CHARACTERISTICS.

Explanation: Most <MC> characteristics are designated by the customer or determined during product and process development activity, particularly those that affect investment and operating cost. <MC> are defined on drawings, and in Design, Material, and Process Specifications. Typically <MC> added for application specific installation characteristics, pass-through characteristics, or to reflect the use of non-standard manufacturing methods. <MC> are added to characteristics whose variation outside of control limits (SPC) or tolerance (attribute inspection) is likely to cause significant negative consequences such as rejects, test failure, and/or manufacturability problems.

Nonconformance could result in scrap, rework, repair, reclaim, excessive manufacturing cost, customer dissatisfaction.

Input control and output conformance for <MC> are either Poke Yoke, SPC or inspection. Standard requirements for demonstrating input control and output conformance is Poka Yoke, $c_{pk} > 1.33$ or 100% conformance assured by 100% inspection. Typically the SPC conformance requirement is applied to characteristics that require process aim control within control limits while the 100% conformance requirement is applied to characteristics that require - the process aim be controlled within tolerance limits.

Major Characteristics <MC*> - Exceptions to $c_{pk} > 1.33$ or 100% inspection requirement

There are exceptions where the <MC> designation is applied to a characteristic that is critical but does not need SPC or 100% inspection to assure continuing control.

For these exceptions the <MC*> symbol is used where an asterisk is attached to the <MC> symbol indicating that the control requirements are defined in the PFMEA and Production Control Plan.

Example:

- ☐ Characteristics which are located by hard-tooling with no inputs that can be adjusted in-process to change the process aim. Ongoing controls for these types of characteristics typically involve setup control methods and periodic inspection.

PTC's (Pass Through Characteristics): Where characteristics or components “pass through” the organization’s quality management system without validation or controls, the organization shall ensure that the appropriate controls are in place at the point of manufacture. (i.e. supplier for purchase parts) Suppliers are responsible to control these characteristics which should include error prevention or error detection methods whenever possible / practical. To define the requirements for this characteristic Modine will define these as either <MC> or <MC*> on the drawings for purchase parts.

Symbols <MC> or <MC*> indicate that the control requirements need to be defined in the PFMEA and Production Control Plan. The list of gauges, Poka Yoke’s, and applicable process capability reports are submitted to Modine through PPAP documentation.

5.3.3 Prototype Material Processes

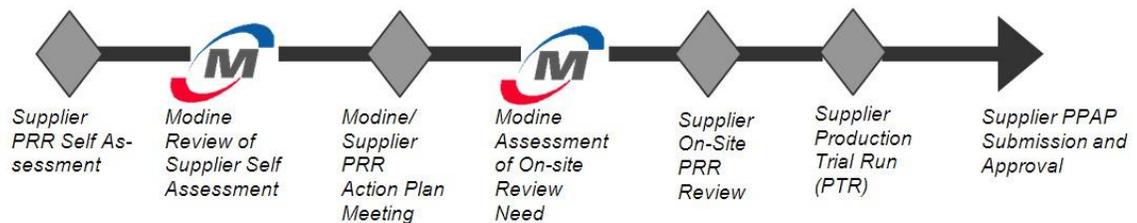
A key part of the product development process often includes the fabrication of prototype tooling and components to support early product testing and evaluation as well as process development. In general, Modine expects production material suppliers to take responsibility for prototype fabrication and supply. Experience shows that the learning acquired during the prototype phase of design and production translates into improved production part quality. The supplier should strive to utilize production representative processes and tooling whenever possible to enhance the learning and prove out process. If the Modine sourced production supplier chooses to outsource the prototype part fabrication, it is expected that the Modine sourced production supplier will be fully engaged in managing the prototype design and fabrication to enable this early learning. In all cases, a prototype control plan must be prepared by the supplier and reviewed with Modine Quality and Engineering personnel.

Prototypes are defined as product produced on temporary tooling or on production tooling that has not been validated. Prototypes shall be 100% inspected according to the Prototype Control Plan, including material verification. Prototypes shall be identified clearly as prototypes, unless Modine specifies otherwise.

5.3.4 Production Readiness Review (PRR)

The Production Readiness Review ensures the readiness of a supplier's quality system, production processes, and related documentation prior to the AIAG Production Part Approval Process (PPAP) / VDA 2 Production Part Approval (PPA) submittal and serial production launch.

Supplier Production Readiness Flowchart



The PRR is Modine's process for verifying that a supplier's production processes and documentation are in place to support the planned Production Trial Run (PTR), which will validate the supplier's capability and capacity to consistently meet Modine's quality and delivery requirements. PRR assessments are typically used for High Risk Critical suppliers or parts. Modine SQA's, Plant Quality Managers and others (e.g. Engineers, Program Manager, Procurement personnel) may participate and/or review the PRR process.

PRR assessments typically include the following items:

- Action plans initiated during validation of Supplier Technical Feasibility
- Supplier APQP action plans
- PPAP requirements
- Verification of Tier II PPAP completion to support PTR
- Verification that all planned tooling, equipment and gauges will be in place to support PTR
- All planned materials and purchased parts are available to support PTR.
- Production documentation including but not limited to:
 - Work Instructions, Control Plans, Inspection Instructions
 - Operator training and qualifications
 - Incoming and outgoing inspection processes
 - Packaging and shipping specifications
 - Part identification and handling plans
- PTR performance objectives (e.g.- 1st pass yield, scrap, OEE, etc.)
- Corrective actions
- Contingency plans
- Change management
- Logistic plan to ensure volume ramp up curve capability
- Safe launch plans for new parts/processes, or parts and processes deemed critical by Modine

A Production Readiness Review (PRR) template can be obtained in [Section 10.0](#) of this manual.

5.3.5 Production Trial Run (PTR)

The intent of the Production Trial Run is to validate the readiness of a supplier's production process prior to the AIAG Production Part Approval Process (PPAP) / VDA 2 Production Part Approval (PPA) submittal and serial production launch.

Modine expects suppliers to view the Production Trial Run as their start of production and not a period of trial and error experimentation. This means, that the supplier produces a specified (if necessary in agreement with Modine) amount of parts with production tooling and production process. According to the needs, may participate at the PTR. In any way, Modine's SQAs, Plant Quality Managers, and others may review the PTR process and results.

PTR Assessments are typically used for High Risk Critical suppliers, processes or parts and may include the following items:

- Tooling
- Equipment
- Gauges
- Measurement data
- Capabilities

Parts produced during Production Trial Run are typically parts used for Production Part Approval Process (PPAP) – see [Section 5.3.6](#).

A Production Trial Run (PTR) template can be obtained in [Section 10.0](#) of this manual.

5.3.6 Production Part Approval Process (PPAP)

Modine requires that all suppliers complete PPAP Level 3 using the latest AIAG Edition, or VDA2 Level 2 for Production Part Approval, and that the completed PPAP/PPA warrant documentation be submitted to the appropriate Modine Plant Quality Engineer or designated representative. Any other requirements on PPAP submission or exemption can be mutually agreed with Modine (e.g. PTR performance / Operational performance Reports, PDS (Packaging Data Specification) etc.). Additional information and the latest version of the AIAG PPAP manual, along with other AIAG manuals can be found at www.aiag.org.

Note that the warrant data / coversheet must include validation of Declarable Substances in accordance with the GADSL (Global Automotive Declarable Substance List) or (when specified) International Material Data System (IMDS) requirements. IMDS Data has to be submitted as early as possible. Timeline needs to be agreed with Modine. Prohibited Substances according to GADSL requirements are not to be used. Information on the GADSL can be obtained at www.gadsl.org and information on IMDS at www.mdssystem.com. Please refer to [section 8.1](#) of this manual for additional information on environmental requirements.

Modine Plant Quality Management in cooperation with Procurement, Logistic and Engineering staff as appropriate will review and complete the PPAP/PPA submission. The choices for disposition are:

- Approved
- Rejected, Action plan is required with date for new submission
- Other (Interim Approval) An Interim Approval requires a Modine-signed deviation,

action plan for new submittal, and defined quantity or date of new PPAP submission.

For suppliers that have multiple rejected PPAP's and repetitive issues submitting acceptable PPAP's, a third party may be used to ensure adequate PPAP's are submitted. The cost of the third party engagement to be mutually agreed upon.

An Approved PPAP, signed by Modine Plant Quality, would enable payment to the supplier for tooling or other expenses incurred during the product or process development process.

See [Section 3.5.1](#) for additional information on PPAP requirements associated with tooling. Unless negotiated prior to business award, the costs associated with PPAP activities are the supplier's responsibility and PPAP samples are to be provided at the production price.

5.3.7 Lot Inspection Reports and Material Test Certificate submission

Suppliers are expected to submit inspection reports and material test certification per the frequency mentioned in the pre-delivery inspection agreement or Control Plan (CP) at the time of PPAP sign off.

5.3.8 Annual Layout inspection and Functional Testing

Modine may require the annual verification of product dimensions, material properties and functional testing. Details of the annual requirements will be agreed to in the Control Plan. Costs associated with this annual activity are the supplier's responsibility and results of the layout inspection shall be available for Modine or any customer for review.

5.3.9 Manufacturing Traceability

Suppliers must have in place a product traceability process. The traceability process must be able to adequately track the suppliers components into Modine's finished product so manufacturing lots can be quarantined in the event of a quality spill.

5.4 Supplier Deviation and Change Management

Prior to shipment, suppliers must notify Modine Plant Quality (using form GF0101) and obtain approval for all temporary product deviations and product / process changes that affect fit, form, function, performance, durability, or appearance, as defined by the AIAG PPAP manual or the VDA, Volume 2 manual.

5.4.1 Deviation Management

Supplier deviation requests shall be submitted using GF0101 form (<http://www.modine.com/web/en/suppliers.htm>, under Supplier Section Current Suppliers, Supplier Reference Documents) and must be communicated to the affected Modine Plant Quality and Plant Procurement or Material Control/Logistics representatives.

- The Supplier requesting the Deviation should provide the following information:
 - Affected Modine Plant name(s)
 - Affected Supplier Facility name/location
 - Part number(s) affected
 - Part name affected
 - Proposed deviation effective date (From: dd/mm/yyyy To: dd/mm/yyyy)
 - Proposed affected part quantity (No. of units/pcs)
 - Description of Deviation

- Reason for Deviation
 - Risk to Modine associated with the requested deviation
 - Corrective action plan to resolve deviation
-
- Modine Plant Quality or Application Engineering enters the information and processes the DP according to the Modine DP Process.
 - Modine Plant Quality or Application Engineering obtains customer approval, if required.
 - After completion of all approvals, Modine Plant Quality returns the approved DP to the supplier.

Note:

If the supplier deviation request affects more than one Modine plant, then the Modine Plant Quality representative coordinates the process with the other plants.

5.4.2 Change Management

Supplier change requests shall be communicated using form GF0101, (<http://www.modine.com/web/en/suppliers.htm>, under Supplier Section Current Suppliers,, Supplier Reference Documents). The GF0101 form shall be sent to the affected Modine Plant Quality Engineering and Material Control/Logistics group, who will coordinate the approval process for the requested change.

- The Supplier requesting the Change should provide the following information:
 - Affected Supplier Facility name/location
 - Part number affected
 - Part name affected
 - Proposed change effective date (from: dd/mm/yyyy)
 - Description of change requested
 - Reason for change requested
 - Cost impact of requested change
- The appropriate Modine coordinator notifies the appropriate team members to initiate the process which includes:
 - Review and approval by Application Engineering as necessary
 - Customer review and approval (if required) coordinated by Modine Plant Quality and/or Application Engineering
- After completion of all approvals Modine Plant Quality will communicate the PPAP requirements to the supplier if needed.

5.4.3 Rework of Product

The supplier shall inform the Modine Plant Quality group of the proposed rework activity and obtain approval via the Deviation Process prior to performing rework which is not included in the control plan. All rework shall be performed according to a documented rework procedure. Products which have been reworked must be identified in a manner approved by the Modine receiving plant to facilitate traceability.

Section 6.0 – Trade Compliance, Logistics & Packaging Requirements

6.1 Trade Compliance Requirements

Suppliers agree to follow Modine’s Global Trade Compliance Policy, located at www.modine.com under the “About Modine” section.

Modine requires all suppliers to:

1. Understand and fully comply with all trade regulations that apply to each shipment;
2. Retain all records necessary to demonstrate such compliance and;
3. Promptly make them available to Modine upon request.

6.1.1 Import/Export and Security Regulation Compliance

Depending on the country of import and export, additional laws and regulations may apply. Suppliers should contact their counsel or Modine Buyer if they have questions about what additional laws and regulations may apply to particular transactions.

Import Regulations

Supplier will comply with all applicable import requirements and regulations, including requirements for

- HTS classification
- Valuation
- Country of origin identification
- Preferential trade programs (i.e. North American Free Trade Agreement (NAFTA) and Generalized System of Preferences (GSP)), such programs must only be utilized if the requirements of the program are met. Upon request, Suppliers must provide applicable preferential trade certificates/declarations or non-preferential declarations, as applicable, at no cost to Modine.
- Tariffs or duties - Suppliers are responsible for any Customs tariffs or duties imposed under trade remedies (i.e. Sections 232 and 301).

International Documentation

- Commercial invoice - see section 6.3.5 of this document
- Packing list – see section 6.3.3 of this document

U.S. Export Control Regulations

Supplier will comply with all applicable export requirements and regulations. Governments regulate what items can be exported and to where and to whom they can be exported. In the U.S., certain items require export licenses under the Export Administration Regulations (“EAR”), located at 15 C.F.R. §§ 730-774, or the International Traffic in Arms Regulations (“ITAR”), located at 22 C.F.R. §§ 120-130. In addition, through various sanctions the governments prohibit doing business with certain prohibited governments, entities, and individuals. In the U.S., the Office of Foreign Assets Control Regulations (“OFAC Regulations”), located at 31 C.F.R. Parts 500-598, implement these sanctions.

Trade Security

Modine is committed to trade security and encourages its suppliers to participate in relevant national and regional programs under the World Customs Organization WCO SAFE framework, including the Customs Trade Partnership Against Terrorism (“C-TPAT”).

China Import Regulations

The following guidelines apply to shipment of product into China:

- All documentation must be provided in English.
- Commercial Invoices and Packing lists must be stamped or signed.
- If wooden packaging material is being used, a Fumigation Certificate issued by an authorized Inspection Company is required or show IPPC remarks on the package. If this isn't provided, the delivery will be held by China Customs and CIQ and could result in large penalties. These penalties will be charged back to the supplier.
- If non-solid wood (including plywood material) is being used, a No Solid Wood Packaging declaration must be issued with Company stamp and signed.
- The shipping label must show Country of Origin. If this data is missing, the default is to impose the highest tariff among all import countries.
- Important: The Net Weight and Gross Weight mentioned in the packing list must be 100% correct, verified against the Physical Packaged Material.

Supplier's non-compliance to these instructions may result in Custom Clearance Delays and additional cost such as: penalties, fines and extra taxes during the customs clearance process. These costs will be the responsibility of the supplier.

6.1.2 Recordkeeping

Suppliers must maintain all records for the maximum time period required by law, which is generally 5 years for U.S. Customs purposes. If longer time period are imposed by particular regulations, those longer time periods apply.

6.1.3 Provision of Records

Suppliers must make requested records available to Modine in a reasonable period of time, generally within 14 calendar days of the request from Modine.

6.2 Material Planning & Schedule Communication

All suppliers are required to fully comply with Modine's logistics policies as defined in this manual and associated Procurement documents. Each region has specific requirements which can be obtained from the respective local Logistics Manager. It is the suppliers' responsibility to obtain and follow these requirements.

6.2.1 Supplier Schedule Communication

Suppliers currently receive supplier schedules from Modine plants via Electronic Data Interchange (EDI), email or fax. Modine is migrating its Enterprise Resource Planning (ERP) system to a common platform and will be transitioning supplier schedule communication to EDI. EDI will reduce the risk of schedule communication errors and will enable suppliers to electronically confirm deliveries via Advance Shipping Notices (ASN's). Modine encourages suppliers to proactively pursue EDI capability using the appropriate regional process listed below.

Although the frequency can vary, schedule communication typically takes place on a weekly basis or when customer requirements drive significant changes in Modine's requirements or delivery schedule. Modine supports several EDI transactions through the use of a third party (North America) or direct (Europe) mailbox or connection.

For Suppliers to Modine NA facilities:

Suppliers to Modine North American facilities are expected to communicate via EDI. Suppliers are encouraged to petition for EDI communication by completing the NA Region EDI Survey which can be accessed in [Section 10.0](#) of this manual. The completed survey should be submitted in accordance with the instructions provided in the survey document.

Information on Modine's NA EDI standards for 830 Planning Schedules and 856 Advanced Shipping Notices (ASN's) can be obtained by contacting EDI_support@na.modine.com.

For Suppliers to Modine Europe:

Requests for EDI connectivity should be made to the appropriate Modine plant Logistics or Procurement group using the Europe EDI Parameter document which is available in Section 10.0 of this manual. Information on the Modine Europe & Asia EDI standards can be obtained through [Section 10.0](#) of this manual.

Modine Europe Vehicular Plants uses the German VDA Standards VDA 4984 Planning schedule and VDA 4987 Advanced Shipping Notice (ASN) and VDA 4906 Invoicing (new VDA4938). These documents can be obtained at www.vda.de. If the supplier cannot use the VDA standards, Modine Europe recommends the use of EDIFACT DELFOR D96A (delivery Schedule) and DESADV D96A (delivery Note) available at www.unece.org/trade/untid/welcome

For Suppliers to Modine China, India or Brazil:

Requests for EDI connectivity should be made to the respective Modine plant logistics activity.

6.2.2 Material Planning & Delivery Schedule Guidelines

For Suppliers to Modine North America:

In order to help suppliers in planning and ordering material, Modine North America will send supplier schedules or purchase orders. Schedule agreements will be released once with all general information (supplier name, part, price, delivery & payment terms, validation dates etc.) in a Blanket Order format. Afterwards the delivery schedules will be released at regular intervals.

The following general approval horizon, unless otherwise stated in the supplier schedule or the corresponding blanket order, are valid:

Domestic Authorizations:

- Finished Goods and WIP Materials
 - Two Weeks (based upon date of release)
 - Cumulative Number: Received plus shipped and released

- Raw Materials
 - Four Weeks (based upon date of release)
 - Cumulative Number: Received plus shipped and released

International Authorizations:

- Finished Goods and WIP Materials
 - Two Weeks + Transit Lead Time
- Raw Materials
 - Four Weeks + Transit Lead Time

Packaging Material Authorizations:

- Fabricated Materials - Two Weeks

No firm periods are authorized. Forecast materials are for planning only. Authorizations levels only apply to cancellation or production stoppage/slow down events.

Order Acknowledgements:

New Schedule transmissions are considered accepted by the supplier if the supplier does not send a written non acceptance statement within 24 hours of receipt.

Cancellations:

Cancellation Claims are consider at end of a program or mid-term based upon our customers and are based on the Authorization levels defined above.

Production Stoppage or Slow Down:

Authorization levels will be considered as part of a long-term production stoppage or slowdown based upon business conditions. Contact Modine Plant Material Control or Procurement to discuss specific business events.

For Suppliers to Modine Europe:

Schedule Agreements will be released once with all general information (supplier name, part, price, delivery & payment terms, validation dates etc.) in a Blanket Order format. Afterwards the delivery schedules will be released in regular intervals.

The following general approval horizon, unless otherwise stated in the supplier schedule or the corresponding blanket order, are valid:

- 1 month approval for production of parts
- +1 month approval of raw material

Additional quantities are a noncommittal forecast only.

Order Acknowledgements -

Supplier to Modine Europe facilities must not send written order acknowledgement under delivery schedule agreements. New Schedule transmissions are considered accepted by the supplier if the supplier does not send a written non acceptance statement within 24 hours of receipt to the appropriate Modine Europe plant material control activity.

Discrete Purchase orders

Discrete (One-time) purchase orders will be released once and contain all the relevant information as described above.

For Suppliers to Modine China:

In order to help suppliers in planning and ordering material, Modine China will send supplier schedules or purchase orders. Schedule agreements will be released once with all general information (supplier name, part, price, delivery & payment terms, validation dates etc.) in a Blanket Order format. Afterwards the delivery schedules will be released at regular intervals.

Raw Materials Authorizations:

- Four Weeks (based upon date of release)
- Additional quantities are a noncommittal forecast only

Order Acknowledgements (China):

New Schedule transmissions are considered accepted by the supplier if the supplier does not send a written non acceptance statement within 24 hours of receipt.

6.2.3 Delivery Schedules

Modine Delivery Schedules contain the following information:

- Modine Contact Information for the Modine ordering plant
- Supplier Contact Information for the Supplier manufacturing plant
- Blanket Order Number associated with the specific schedule
- Item: Number and date of current release
- Material: The Modine part number being ordered and the Modine system description of the part being ordered
- Drawing: The Modine drawing & release number
- Material Specification: The Modine material specification number
- Target/Plan Quantity: Theoretical target schedule quantity
- Cum Released Quantity: The total quantity of this part ordered from this supplier on this purchase order at the time of the current release
- Cum Received Quantity: The total amount of this part received from this supplier on this purchase order. This reflects what the Modine plant has received as of the print date. Note: There can be a difference between what you as the supplier has total shipped and what the Modine plant shows as cumulative total received. This difference should be the in-transit quantity
- Last Goods Receipt: The arrival date of the last quantity received at the Modine plant. This quantity is part of the cumulative received quantity. It is broken out so the supplier can see Modine's last received quantity. This can be matched to the supplier's last shipment for verification of the parts still on the way to Modine.
- Delivery Note: The supplier's delivery note number of Modine's warehouse last incoming goods (or parts incoming to c/stock of the supplier at the agreed warehouse).
- Delivery Date at Modine Plant (if any specific notes not added)
- Cumulative Quantity
- Quantity

- Change in quantity from previous transmission: Change Index of Schedule Transmission: Some plants work with Transmission Indexation.

6.3 Transportation

The selected transportation modes shall be appropriate for the movement of the product, as well as compliant with national and international transportation and safety regulations. Modine has established preferred carriers for land, air and ocean transport. Please contact the specific Modine destination plant Material Planning and Logistics department for information on the preferred carriers.

During transport, product must be secured in a manner such that shipments arrive intact and in good condition. Modine reserves the right to refuse loads if the shipment is deemed unsafe to offload or store. Examples of unsafe conditions may include, but are not limited to, unstable stacks of pallets and general poor container or load conditions.

Documentation for each shipment is the responsibility of the supplier and must be complete, timely and legible. The supplier is to provide all necessary customs and other legal documents as required by each country. Requirements for documents such as the commercial invoice, Bill of Lading (a type of document that is used to acknowledge the receipt of a shipment of goods), and packing list may be obtained from the local Modine Logistics Manager.

6.3.1 Expedited Shipments

Suppliers must have the capability to make expedited shipments, should it become necessary due to any disruptions in the supply-chain. This includes:

- The supplier having relationships and local accounts set up with an express shipment providers. Please contact your local Modine Plant Material Manager for direction on local approved expedited carriers.
- The supplier being fully aware and capable of getting shipments lawfully expedited through Customs, or any other governmental agency.
- The supplier will be held responsible for all expedited/premium freight costs if the supplier is responsible for the action causing the premium freight.

6.3.2 Logistics & Materials Profile

Modine regional groups may require suppliers to complete a Logistics and Materials Profile prior to, or at the time of sourcing to capture general operational information at the local facility level which will assist in future Modine/Supplier logistics communication. These Logistics Profile documents can be obtained from your Modine Plant Procurement contact. Items covered are:

- Plant and warehouse addresses and contact information
- Production, shipping and receiving hours of operation
- After hours contact information
- Shipment documentation requirements

6.3.3 Basic Packing List Requirements

Each shipment must be accompanied by a Packing List in English that clearly and legibly displays:

- Sold to address
- Ship to address
- Ship from address
- Ship date
- Modine purchase order number or release number
- Modine purchase order line item number
- Modine part number and revision level letter
- Modine part description
- Quantity (units as specified by the purchase order)
- Number of containers, skids, etc.
- Accurate gross and net weight of the shipment
- Manufacturer's lot number or heat number (when applicable)
- Chemical/physical analysis (when applicable)
- Carrier used
- Packing lists for Modine China and Brazil must have the supplier's company stamp and an ink signature.

6.3.4 Basic Bill of Lading Requirements

The Bill of Lading must be included with each shipment and reference:

- Bill to address (freight billing)
- Ship to address
- Ship from address
- Weight
- Modine part number
- Quantity (units)
- Description of product
- Carrier
- Other regional or product related requirements, such as:
 - Country of origin
 - National Motor Freight Classification and Freight Class
 - Dimensions
 - Hazardous Materials classification (if applicable)

6.3.5 International Commercial Invoice Requirements

A commercial invoice in English is required for international shipments to facilitate Customs clearance and provide data for various Security Filing regulations such as ISF in the US and ICS in the EU. If the required information is not included in the supplier's system-generated invoice, they must add the data or create a pro-forma invoice that does. The minimum data required is listed below, but additional data may be required depending upon regional or national regulations:

- Invoice number
- Seller name and address
- Sold to name and address
- Ship to name and address
- INCO terms
- Invoice date

- Modine reference (purchase order number or release number)
- Modine part number and revision level letter
- Product description
- Quantity (units as specified by the purchase order)
- Per unit and total value by item
- Total invoice value
- Transaction currency
- Harmonized tariff number
- Country of origin
- Invoices for Modine China and Brazil must have the supplier's company stamp and an ink signature

6.4 Packaging & Labeling – General Requirements

Packaging requirements should be established early in the product development process to facilitate packaging design and validation during the prototype and early production trial program phases. It is the supplier's responsibility to proactively contact the Modine receiving plant material control department to initiate discussions on packaging design and to communicate packaging costs to Modine Procurement. Section 10.0 of this manual contains a list of regional Packaging and Labeling guidelines associated with Modine China, India and Brazil.

6.4.1 Supplier Responsibilities

To ensure damage-free shipments, it is the suppliers' responsibility to design and develop packaging and internal dunnage appropriate to the given transportation mode. The supplier is encouraged to work with the receiving Modine plant material planning & logistics department to conduct shipping trials for new product or new/revised packaging. Modine may assist with the design but accepts no responsibility for nonperformance. Once the packaging method has been accepted, the supplier may not change without prior written approval from Modine.

In the event that parts are found at Modine that are damaged due to incorrect packaging, the supplier is responsible for replacing the damaged parts at no cost to Modine, including associated premium freight charges if required to maintain Modine's customer schedules.

6.4.2 Ergonomics

To ensure worker safety and loss prevention, package design shall consider all human interaction. For parts considered for a small container manageable by one person, refer to local Environmental Health & Safety standards for recommended limits. For parts packaged in larger containers that require material handling equipment, drop doors may be required. Drop door height shall be approximately 50% of the wall height. For additional information on Health and Safety expectations, please see Section 8.2 of this manual.

6.4.3 Expendable Packaging Considerations

Expendable packaging must be readily recyclable or economically and legally disposed of in accordance with local legislation. Modine also encourages the use of post-consumer, recycled content in its packing materials. Export packaging must conform to international phytosanitary standards for solid wood packaging material (ISPM 15) requiring debarked and heat treated or fumigated lumber. For more information, visit www.aphis.usda.gov/import_export/plants/plant_exports/wpm/

6.4.4 Pack Quantity

Standard pack quantities shall be based on aforementioned ergonomic standards. It is the supplier's responsibility to determine the packaged quantities and to communicate this standard pack quantity to the respective plant personnel for verification and approval. Mixing of part lots or part numbers within containers is prohibited.

6.4.5 Additional Protection within Containers

For some parts, interior dunnage or bagging may be required to prevent part damage resulting from contact or contamination. Modine will identify parts that require additional protection not provided with the standard packs.

For parts potentially damaged by contaminants, the totes must be lined with a plastic bag. It is the supplier's responsibility to design necessary dunnage. Modine plant personnel must pre-approve dunnage prior to shipment of product.

6.5 Regional Packaging & Labeling Guidelines

6.5.1 Packaging and Labeling – North America

Modine North America Procurement will provide specific packaging requirement information as part of the new business quotation process. Suppliers are required to work with the appropriate Modine plant Material Planning and Logistics department to finalize product packaging requirements in preparation for the PPAP completion.

Incoming material shall be identified by the supplier with a non-handwritten bar coded identification label. Specification AIAG B10 or VDA or other regional shipping part identification requirements shall apply. Provision shall be made on the package system for the container identification and its contents. For quantity, the unit of measure should be equal to the ordering unit of measure per the supplier agreement.

Proper labeling of each container and pallet is critical, and labeling compliance and accuracy is factored into the Supplier's Scorecard rating defined in Section 7.0 of this manual.

Hazardous Material Labeling Requirements:

Regional requirements for hazardous material shipments (e.g. GHS – Globally Harmonized System of Classification, Labelling and Packaging of Chemicals) must be adhered to. For more information, visit:

www.unece.org/trans/danger/publi/ghs

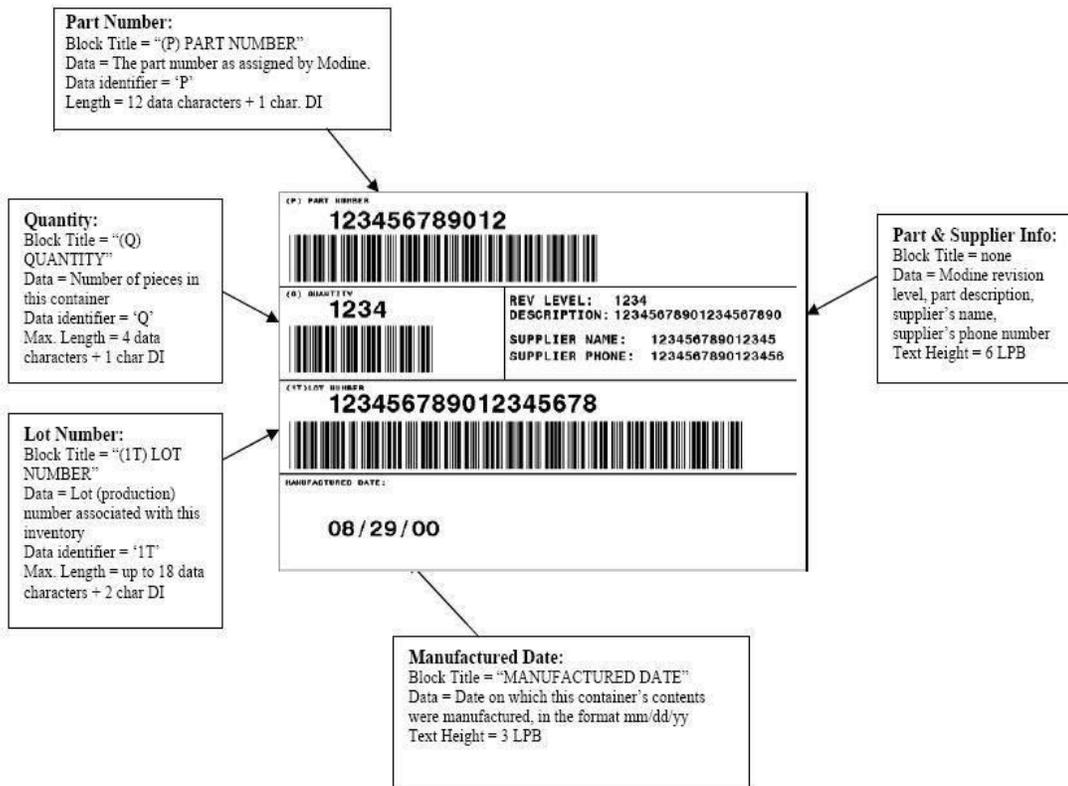
The following information and diagrams provide some general guidelines for labeling and identification. Specific identification requirements and label locations must be agreed upon with the receiving Modine Plant Material Planning group prior to the shipment of serial production parts.

- Recommended label sizes are provided with each exhibit
- Deviation from these sizes requires the approval of Material Control personnel
- These are consistent with the Automotive Industry Action Group Shipping/Parts Identification and labeling should comply with Label Standard (AIAG B-10), the Symbology Standard (AIAG B-1)

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Container Label – North America

Each container or package will have a label indicating the contents of each container. The following specifications are for the container label only. These specifications follow the AIAG B-10 guidelines and are required for Modine plants that require bar coding. A sample label must be sent to the Material Control department at the receiving plant for approval prior to first shipment.



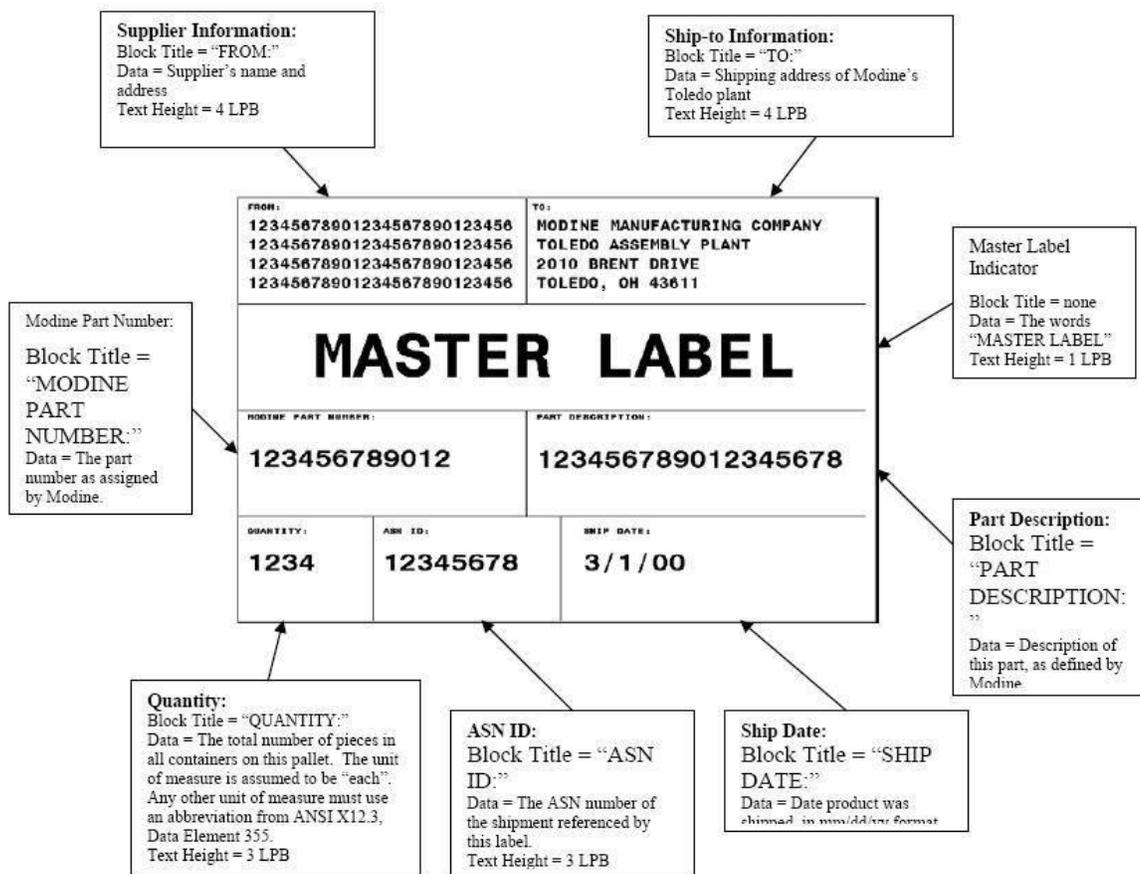
Recommended label size: 4" x 6"

AIAG Container Label

Master Label – North America

Each pallet or master pack containing multiple containers will require a master label indicating the total quantity per pallet load.

The following specifications is for the AIAG Master label only following the AIAG B-10 guideline and is required for Modine plants that require bar coding. A sample label must be sent to the Material Control department at the receiving plant for approval prior to first shipment.



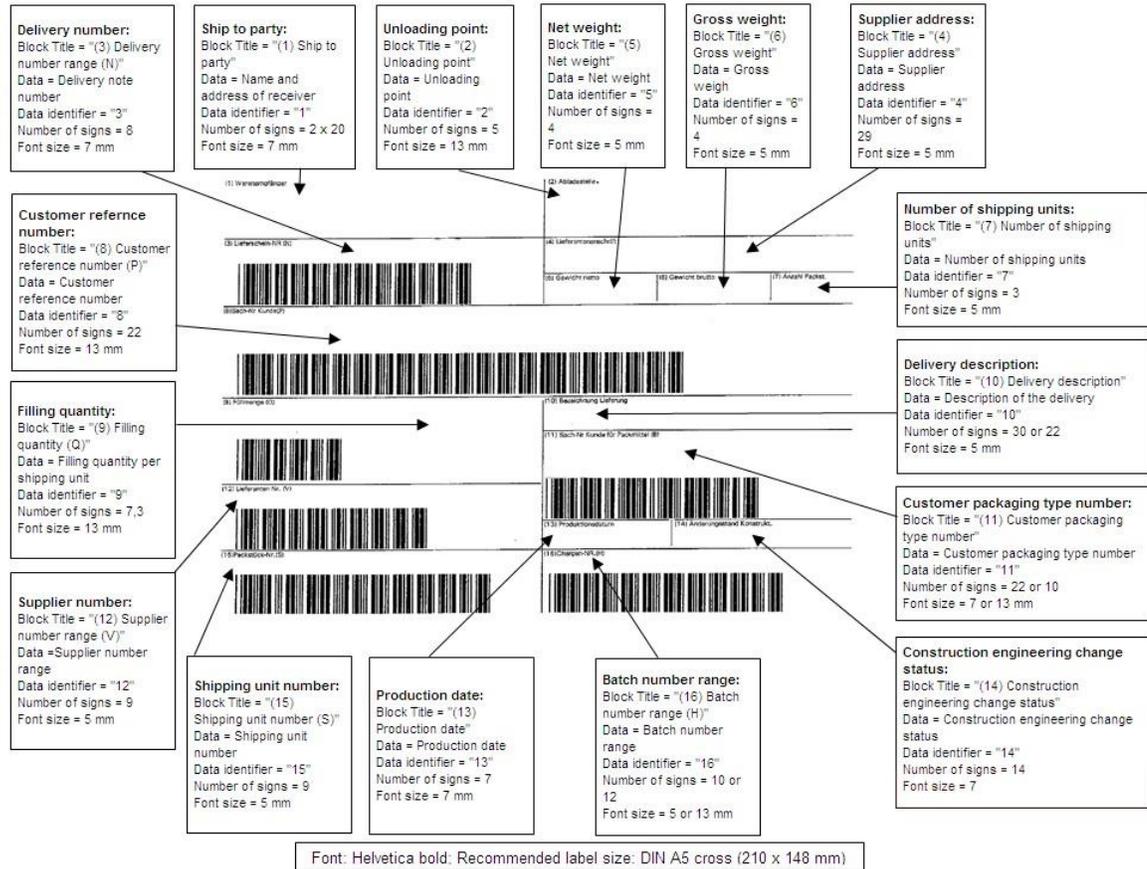
Recommended label size: 4" x 6"

AIAG Master Label

6.5.2 Packaging & Labeling - Europe

Modine Europe Procurement will provide specific packaging requirement information as part of the new business quotation process. Suppliers are required to work with the appropriate Modine plant Material Planning and Logistics department to finalize product packaging requirements in preparation for the PPAP completion.

The following specification is for the VDA 4902 master label to be used for parts supplied to Modine European Vehicular Plants. A sample label must be sent to the Material Control department at the receiving plant for approval prior to first shipment.



VDA 4902 Master Label

6.5.3 Packaging and Labeling – China

Modine China has established Packaging and Labeling requirements to support their local manufacturing facilities. Please see [Section 10.0](#) of this manual to obtain the reference document outlining the Modine China Packaging and Labeling requirements.

6.5.4 Packaging and Labeling – India

Modine India has established Packaging and Labeling requirements to support their local manufacturing facility. Please see [Section 10.0](#) of this manual to obtain the reference document outlining the Modine India Packaging and Labeling requirements.

6.5.5 Shipping and Packaging - Brazil

Modine Brazil has established shipping and packaging requirements to support their local manufacturing facility. Please see [Section 10.0](#) of this manual to obtain the reference document outlining the Modine Brazil Shipping and Packaging requirements.

Section 7.0 – Supplier Performance Assessment

7.1 Introduction

To track and communicate supplier performance, Modine has established a supplier performance rating system. This rating system is an ongoing, integrated method for collecting, analyzing, and communicating supplier performance data to the supply base to encourage continuous improvement.

7.2 Supplier Scorecard

Active suppliers to Modine with significant spend, a critical product, or with demonstrated performance concerns may receive monthly and annual scorecards based on the key measurable listed below. Suppliers may be asked to attend an executive review with Modine Management to review the scorecard status, discuss improvement plans, and enhance the working relationship between Modine and the supplier.

Individual Modine Plant Quality personnel will communicate with suppliers on a more frequent basis to provide information on non-conforming part issues, feedback on their Quality PPM performance and On-Time Delivery performance. Modine expects that the supplier will promptly investigate any Quality PPM, delivery non-conformance, or Warranty concern and submit a Corrective Action Report 8D as described in [Section 4.4.1](#) of this Manual. The timeliness and effectiveness of these corrective actions are important metrics in the Supplier Scorecard evaluation.

7.3 Key Measurable

The following is a summary of the ten Key Performance Indicators of the Modine Supplier Performance Assessment Process:

- 1. Commercial Performance (15%)** – Evaluation of the supplier's ongoing continuous improvement cost reduction support.
- 2. Commercial Communication (5%)** – Evaluation of the supplier's communication and collaboration behavior with Modine Procurement. Ratings will consider the supplier's responsiveness to Modine requests for information and RFQ's, Cost Breakdown sharing, Financial Health discussion, and ongoing Modine/Supplier discussions including providing early notice of supplier concerns or risks that could impact Modine or Modine's customers business.
- 3. Quality - Non Conformance Claim Incidence Quantity (10%)** – Evaluation of the number of non conformance issues (NCR's) identified by the Modine plant during the evaluation period.
- 4. Quality Defect PPM – DPPM (20%)** – Evaluation of the supplier's competitiveness versus peers in defective parts per million supplied to Modine. It is Modine's expectation that suppliers will continuously strive to produce zero defects.
- 5. Quality Systems & Communication (10%)** – Evaluation of the supplier's communication and collaboration behavior with the Modine Plant Quality office or Central Quality. Ratings consider the supplier's responsiveness to non-conformance issues, adherence to quality disciplines, warranty issue handling, and performance in completing new/changed product PPAP actions on-time. A key factor will also be

the supplier's willingness to communicate developing issues (risk) before they impact Modine. Failure to maintain valid ISO 9001:2015 or IATF16949:2016 certification (where required), per section 4.0 of MGSM; will result in a zero rating for this factor. It is the suppliers responsibility to provide valid certificates to Modine Procurement.

6. **Environmental, Health & Safety (5%)** – Evaluation of the supplier's approach concerning compliance with all applicable legal requirements, the supplier's application of Environmental Management and Health & Safety Management Systems, and support of environmental and safety issues along the supply chain
7. **Supply Logistics On Time Delivery - OTD (15%)** – This is defined as the percentage of product delivered on the due date, and in the correct quantity as specified by Modine. It is Modine's expectation that suppliers will continuously strive to produce 100% On Time Delivery without the use of Premium Freight.
 - 7.1 **Premium Freight Incidents (5%)** – Defined as freight incidents which incurred additional charges paid to a transportation provider to expedite shipments in order to meet a required date.
8. **Supply Logistics Communication (5%)** – Evaluation of the supplier's behavior in communicating with the Modine Plant Logistics office on any shipping, packaging, or scheduling concerns or issues, including the timely completion of Logistics Agreements to support new product business.
9. **Program & Technical Support (10%)** – Evaluation of the supplier's technical and manufacturing support provided in the course of supporting existing or new business.

7.4 Escalation Levels

If a supplier's performance degrades significantly in the areas of quality, delivery, or communication the following escalation steps may be used:

Level - Q1: Supplier has significant or repetitive problems

- Quality, delivery, or response issues.

Level - Q2: Supplier has not successfully solved the issue

- Repeat quality, delivery, or response issues.
- Delayed response or insufficient 8D root cause analysis.

Level - Q3: Issues not resolved and supplier needs support to solve them

- Supplier needs 3rd party support to solve issues with quality or capacity.
- Quality or delivery issues have impacted Modine's production line.

Level - Q4 / Strategic Hold: Issue not resolved by Q3 escalation

- Sevier issues with quality, delivery, capacity, or response.
- Process or production site change without pre approval by Modine.
- Quality or delivery issue that impacted Modine's customer.

Modine may involve a third party to assist the supplier in solving their issues at the supplier cost after mutual agreement. In the event a supplier does not address their deficiencies, Modine may choose to resource the business from the Supplier and remove the supplier from the Approved Supplier List.

De-Escalation: for Level Q1 – Level Q4-S-Hold

Supplier is required to take an active part in solving deviations and support the de-escalation activities. If the supplier has demonstrated performance acceptable by Modine, de-escalation will be issued and notified to supplier.

7.5 Supplier Development

Based on scorecard performance, Modine SQA will select the key poor performing suppliers on an annual cadence to perform process audits as per VDA 6.3 process audit standards. Suppliers are to submit their improvement plan within 15 days of the audit report receipt and provide regular updates to Modine on actions initiated to close the audit observations.

Wherever necessary Modine may also recommend suppliers use a Modine approved third party for technical and system guidance to address the observations at their commercial scope as mutually agreed.

Section 8.0 – Environmental, Health & Safety

8.1 Environmental

Modine expects that its suppliers will consider environmental aspects in their daily business. This means that the supplier's management is committed to environmental protection and supports its employees to act with environmental awareness.

Modine appreciates if the suppliers maintain an Environmental Management System according to ISO 14001 and continually improve their environmental performance.

It is the responsibility of each supplier to provide Modine Procurement with an up-to-date copy of the suppliers ISO 14001 certificate.

8.1.1 Prohibition of Substances

All legally required substance prohibitions, restrictions and threshold values shall be met. This refers to legal requirements of the country where the supplier is located, and the country where the receiving Modine plant is located.

In case a material has to be changed to meet the legal requirements, it is mandatory that the supplier notifies Modine with a change request followed by PPAP approval as specified in Section 5.4.2.

Additional requirements:

All supplied material (production material, sub-assemblies, operating supplies, packaging material, chemicals):

- Must not contain any substances listed on the REACH Candidate List in quantities greater than 0.1% weight by weight (w/w) or listed in Annex XIV of the REACH Regulation (European Regulation 1907/2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals). Supplier to provide IMDS REACH report according to Modine requirements.

The REACH Regulation is available at:

www.echa.europa.eu/web/quest/regulations/reach/legislation

The REACH Candidate List is maintained at:

www.echa.europa.eu/web/quest/candidate-list-table

- Must not contain any prohibited substances according to GADSL (Global Automotive Declarable Substance List) requirements. The GADSL is maintained at www.gadsl.org
- Must not contain prohibited substances according to ROHS (restriction of the use of certain hazardous substances in electrical and electronic equipment). The ROHS regulation is available at: www.ec.europa.eu/environment/waste/weee
- Radiation Protection Provision – The supplier shall comply with radiation protection regulations and with any pertinent decrees by public administration at all times. Supplied materials, components, systems, etc. shall not contain any artificial radioactive materials. Noble gases originating from air are excluded from these regulations provided that the isotope ratio in the gas corresponds to that in

the air.

Where natural radioactive substances are present in materials, components or systems without their addition being targeted, i.e. based on their radioactivity, and where these materials are to be used in the work process or introduced into vehicles, the supplier shall notify the type and activity of the radionuclides. Based on these indications, the client will estimate the exposure to radiation at the workplace of the relevant operator or with regard to the vehicle occupants. The limit value applicable to the general public shall be adhered to in each case.

- California Proposition – 65 : Any prohibited substances according to California Proposition - 65 (restriction of the use of certain toxic chemicals known to cause cancer or birth defects or other reproductive harm) need to be notified to Modine. The California Proposition - 65 regulation is available at:
<https://oehha.ca.gov/proposition-65/general-info/proposition-65-plain-language>
<https://oehha.ca.gov/media/downloads/proposition-65//p65list112318.pdf>

Supplier to provide California Proposition – 65 substances declaration report according to Modine requirements.

Exceptions to these additional requirements are only possible with the written approval of Modine Procurement as well as Modine Application Engineering and after review of all possible alternatives. Any exceptions to these additional requirements must not violate legal requirements.

8.1.2 Requirements of Modine Customers

Modine's suppliers must be aware that requirements of Modine's customers must be fulfilled throughout the whole supply chain. It is the responsibility of the supplier and their sub-suppliers to collect the appropriate product and process related specifications. The supplier should proactively contact Modine to obtain the appropriate Customer Specifications.

Suppliers are expected to understand Modine Product safety requirements identified in drawing or any other notified documents and address those needs in manufacturing process documents like PFMEA, Control Plans etc...and transfer the same requirements into their supply chain.

In case a Product Safety Officer (PSO) is required by Modine or Modine customer, the supplier shall comply with this requirement.

8.1.3 Duty of Declaration

Supplied raw materials and supplies (production materials, chemicals, substances, mixtures) may contain hazardous substances only if those substances are declared according to the legal requirements for Safety Data Sheets applicable at the receiving Modine site.

Substances that are classified as declarable according to GADSL (Global Automotive Declarable Substance List) have to be declared to Modine as referred to in [section 5.3.6](#) of this manual if they exceed the defined threshold values.

8.1.4 Contact Person

The supplier has to nominate an individual responsible for environment content considerations and has to submit the contact data to Modine's Procurement Department.

8.2 Health & Safety

Modine has the expectation that their supply base consider Health & Safety aspects in their daily business. This means that the supplier's management is committed to Health & Safety and supports its employees to act with awareness for Health & Safety.

The supplier must conduct business according to the applicable national legal requirements for Health & Safety as a minimum requirement.

Modine appreciates if the suppliers maintain a Health & Safety Management System according to the OHSAS (Occupational Health & Safety Advisory Services) 18001 and strive to continually improve their Health & Safety performance.

It is the responsibility of each supplier to provide Modine Procurement with an up- to-date copy of the suppliers BS OHSAS 18001 certificate.

The Occupational Health and Safety Assessment Standard (BS OHSAS 18001) will be replaced by ISO 45001 without replacement. ISO 45001 is a standard published by the International Organization for Standardization (ISO) in March 2018 and describes requirements for an occupational health and safety management system (AMS) as well as instructions for implementation.

After the release of ISO 45001, you have three years to certify your company to the new ISO 45001. Until then, the existing BS OHSAS 18001 certificates will be valid.

Section 9.0 – Definitions

Term / Acronym	Definition
AIAG	Automotive Industry Action Group
APQP	Advanced Product Quality Planning
ASL	Approved Supplier List
ASN	Advance Shipping Notice
CAR-8D	Corrective Action Report - Eight Discipline Problem Solving Format
CBP	U.S. Customs and Border Protection
COPQ	Cost of Poor Quality
CR	Change Request
C-TPAT	Customs-Trade Partnership Against Terrorism
D&B	Dun & Bradstreet – Financial health rating agency
DP	Deviation Permit
OTD	On-Time Delivery Rating
DIN	Deutsches Institut für Normung e.V. (in English: the German Institute for Standardization)
DFMEA	Design Failure Mode and Effects Analysis
EDI	Electronic Data Interchange
EH&S	Environmental, Health & Safety
ERP	Enterprise Resource Planning
GADSL	Global Automotive Declarable Substance List www.gadsl.org
GHS	Globalized Harmonized System of Classification and Labeling of Chemicals
ICS	Import Control System (European version of ISF)
IMDS	International Material Data System (www.mdsystem.com)
ISO	International Organization for Standardization
ISF	Importer Security Filing
Isi	Informationssystem für Sicherheitsdatenblätter (Information System for Material Safety Data Sheets)
ISPM 15	The International Standards for Phytosanitary Measures, Guidelines for Regulating Wood Packaging Material in International Trade
ITAR	International Traffic in Arms Regulations www.pmddtc.state.gov/regulations_laws/itar
INCO	International Commercial Terms

Term / Acronym	Definition
JIT	Just in Time
MC	Major Characteristic
MDS	Material Data Sheet
MGSM	Modine Global Supplier Manual
MSDS	Material Safety Data Sheet
NAFTA	North American Free Trade Agreement
NCR	Non-Conformance Report
OEM	Original Equipment Manufacturer
OHSAS	Occupational Health & Safety Advisory Services
OSHA	Occupational Health & Safety Administration
PFMEA	Process Failure Mode and Effects Analysis
PPM	Parts Per Million
PO	Purchase Order
PPA	Production Part Approval
PPAP	Production Part Approval Process
PRR	Production Readiness Review
PTC	Pass Through Characteristic
PTR	Production Trial Run
DPPM	Defect Parts Per Million (Quality Rating)
RC	Risk Characteristic
REACH	Registration, Evaluation, Authorization of Chemicals www.acea.be
RFQ	Request For Quotation
RoHS	Restriction of the Use of Certain Hazardous Substances www.ec.europa.eu/environment/waste/weee
RPN	Risk Priority Number
R&R	Repeatability and Reproducibility
SC	Significant Characteristic
SOP	Start of Production
SPC	Statistical Process Control
SRM	Supplier Relationship Management
STFC	Supplier Technical Feasibility Commitment
T&C	Terms & Conditions
VDA	Verband der Automobilindustrie e.V. (English: Interest Group of the German Automobile Industry)
VMI	Vendor Managed Inventory
WCO SAFE Framework	World Customs Organization Framework of Standards to Secure and Facilitate Global Trade www.wcoomd.org

Section 10.0 – Reference Documents [\(Click here to access\)](#),

or go to: www.modine.com/supplierdocuments

Reference Supplier Manual Section	Document Description
2.1	New Supplier Interest Form – Web based information survey for suppliers interested in becoming a supplier to Modine
2.2	New Supplier Assessment
3.1	Modine Terms and Conditions – North America (English) Modine Terms and Conditions – North America (Spanish) Modine Terms and Conditions – Europe (German & English) Modine Terms and Conditions – Brazil Modine Terms and Conditions – China Modine Terms and Conditions – India
3.5.1	Factory Standard ME 95022 European Tool Marking
3.5.1	Tooling Inventory Sheet Template
5.2	Supplier Technical Feasibility Commitment (STFC)
5.2	Modine Supplier APQP Reporting Template – Modine GF0047
5.3.6	Production Part Approval Process(PPAP) Requirements check sheet
5.3.3	Production Readiness Review(PRR) / Production Trial Run Template(PTR)
5.3.8	Annual Layout Inspection and Functional Testing Requalification Warrant Template
5.4.1	Deviation Request Template (DP Form)
5.4.2	Change Management Request Template (CR Form)
6.2	NA Region EDI Survey
6.2	NA Region EDI Planning Schedule (830) Guidelines
6.2	NA Region EDI Advance Ship Notice (856) Guidelines
6.2	NA Region EDI Functional Acknowledgment (997) Guidelines
6.2	Modine Europe EDI Guidelines (English/German)
6.5	Packaging Data Sheet (PDS) Form
6.5.3	Modine China Packaging and Labeling Requirements (English/Chinese)
6.5.4	Modine India Packaging and Labeling Requirements (English)
6.5.5	Modine Brazil Shipping and Packaging Requirements (English)
7.5	Process Audit check sheet (VDA 6.3 process audit template)

Section 11.0 – Revision Log

Last Date Revised	Version	Chapter / Section	Section Description	Description of Revision
05Apr2011	3.0	ALL	ALL	Initial Release – third Edition
30Jun2013	4.0	1.6 1.7 1.8 1.9 1.10 2.0/3.0 4.3 4.4 5.2 5.3.4 5.3.5 5.3.7 5.4.3 6.1 6.2 6.4 7.0	H&S Policy Trade Compliance Policy Anti-Fraud Policy Anti-Corruption Policy Conflict Minerals Notice Supplier Registration & RFQ Quality – Supplier QMS Non-Conforming Product STFC Production Readiness Review Production Trial Run Annual Inspection/Validation Deviation & Change Mgmt Trade Compliance Material Planning & Schedules Packaging & Labeling Supplier Performance Metrics	Added Health & Safety Policy Added Trade Compliance Policy Added Anti-Fraud Policy Added Anti-Corruption Policy Added Conflict Minerals Notice Added reference to web-based eSourcing & SRM application Moved ISO/TS table to Appendix A Added ref. to Global 8D Prism Portal Added text to explain STFC process Added PRR Process Description Added PTR Process Description Added description of requirements Added text regarding rework Added US and China trade compliance requirements Added EDI expectations Clarified requirements & added China, India and Brazil reference Documents Revised weighting for DPPM and Technical Support
28May2019	5.0	1.1, 4.2, 4.3 1.3, 2.4, 4.4.1, 5.3.6 1.4 1.5 2.0 2.9 3.3.3 3.3.4 3.5.1. 4.1 4.4	Supplier Manual Goals & Scope, Documentation and Supplier Quality Management requirements Procurement Policy, Onsite Review, Non Conformance Documentation, Production Part Approval Process Quality Policy Environmental Policy Doing business with Modine Supplier communication of organization or business status change Cost Transparency Supplier Selection Tooling Management Program Quality - General Nonconforming product	ISO9001:2015 and IATF16949:2016 clause added Added authorized Third Party Latest Quality policy updated Environmental requirements on energy reduction, pollution, toxic chemicals and waste generation Under commodity group added Paints and related chemicals and authorized distributors materials. Management / Organization change notification to Modine before execution Detailed cost break down requirement included VDA audit qualification requirements included Modine China Requirements added Supplier Quality certification requirements modified for Automotive and Non-automotive business needs along with global supplier approval criteria's Continuous improvement on quality performance requirements added

Last Date Revised	Version	Chapter / Section	Section Description	Description of Revision
28May2019	5.0	4.4.2	Supplier Quality	8D response timeline changes made
		4.4.3	Nonconformance expectations	NCR Min. Charges changed and 8D delayed submission commercial clause included
			Cost of Poor Quality	CSR included
		5.2	Supplier Selection	Special characteristics detailed description included
		5.3.2	Special Characteristics	
		5.3.7	Lot Inspection Reports and Material test certificate submission	Lot Inspection reports and material test certificates requirements included
		5.3.9	Manufacturing Traceability	Product Manufacturing Traceability added
		5.4.9 & 5.4.10	Deviation Management	GF0101 form reference added
		6.1.1	Import/Export and Security Regulation Compliance	US import regulations, Trade security modified
		6.3.3	Basic Packing List Requirements	Gross Weight and Net Weight added
		6.3.5	International Commercial Invoice Requirements	China and Brazil Invoice requirements added
		7.2	Supplier Scorecard	Supplier Monthly scorecard process and premium freight criteria added
		7.4	Impact of Deterioration in supplier performance	Escalation level Q1- Q4 S hold added
		7.5	Escalation Levels	Modine Escalation process updated
7.6	Supplier Development	Process audits included		
8.1.1	Prohibition of substances	California Preposition – 65 included		
8.1.2	Requirements of Modine customers	Product safety requirements added		
29Nov2019	6.0	1.10	Gifts & Entertainment Policy	3 new sections added
		1.11	Positive Work Environment Policy	
		1.12	Data Protection Policy	

APPENDIX A

Modine Specific Quality Management System (QMS) Requirements to ISO 9001:2015

This appendix identifies the Modine-Specific QMS requirements that are in addition to the requirements of ISO 9001:2015 and IATF 16949:2016.

	ISO 9001 requirements	Modine Specific QMS Requirements	Reference MGSM Section
4	Context of the Organization		
4.1	Understanding the organization and its context		
4.2	Understanding the needs and expectations of interested parties		
4.3	Determining the scope of the quality management system		
4.4	Quality Management system and its processes		
5	Leadership		
5.1	Leadership and commitment		
5.1.1	General		
5.1.2	Customer focus		
5.2	Policy		
5.2.1	Establishing the Quality Policy		
5.2.2	Communicating the Quality Policy		
5.3	Organization roles, responsibilities and authorities		
6	Planning		
6.1	Actions to address risks and opportunities		
6.2	Quality objectives and planning to achieve them	Suppliers shall continuously strive to produce zero defects	4.1
6.3	Planning of changes	Suppliers shall inform Modine about significant organizational and/or business changes. (e.g. Change of Management Level persons, Business Ownership, Restructuring or insolvency). Suppliers shall inform Modine about changes in the position of the quality representative.	2.8
7	Support		
7.1	Resources		
7.1.1	General		
7.1.2	People		
7.1.3	Infrastructure		
7.1.4	Environment for the operation of processes		
7.1.5	Monitoring and measuring devices		
7.1.6	Organizational Knowledge		
7.2	Competence		
7.3	Awareness	The supplier is expected to understand and comply with Modine's Business Ethics (Right Way) requirements.	1.4

	ISO 9001 requirements	Modine Specific QMS Requirements	Reference MGSM Section
7.4	Communication		
7.5	Documented information		
7.5.1	General		
7.5.2	Creating and updating		
7.5.3	Control of documented information		
8.0	Operation		
8.1	Operation Planning and control		
8.2	Requirements for products and services	The Supplier shall have defined product development process that is in compliance with AIAG APQP Manual.	5.3 8.3.5, 8.4.2
8.2.1	Customer communication		
8.2.2	Determining the requirements for products and services		
8.2.3	Review of the requirements for products and services	The Supplier may be required to complete a Modine Supplier Technical Feasibility commitment (STFC) to ensure that the supplier's manufacturing and quality engineers clearly understand Modine requirements, and to validate the supplier's and capacity.	5.2.1
8.2.4	Changes to requirements for products and services.		
8.3	Design and Development of Products and Services		
8.3.1	General		
8.3.2	Design and development planning		
8.3.3	Design and development inputs	Supplier documentation (FMEA, control plans, operator instructions) shall identify both Modine and supplier special characteristics Modine special characteristics (product or process) may be designated Special characteristics require special acceptance criteria see IATF 8.3.3.3. <MC> <MC*>	5.3.2
8.3.4	Design and development Controls	Prototypes are defined as product produced on temporary tooling or on production tooling that has not been validated . Prototypes shall be 100% inspected according to the prototype control plan, including material verification. Prototypes shall be identified clearly as prototypes Unless Modine specifies otherwise. All products shall be approved using the requirements of the AIAG PPAP manual or the VDA, Volume 2 manual, as stated on the Purchase Order. The standard requirements for AIAG PPAP manual is level 3 and for the VDA Volume 2 it is level 2, unless otherwise stated on the Purchase order. The coversheet must include validation of Declarable substances in accordance with the Global Automotive Declarable substance List (GADSL) or international Material Data System (IMDS)-(refer to Section 8.1.3 of this manual).	5.3.3 8.1.3

ISO 9001 requirements		Modine Specific QMS Requirements	Reference MGSM Section
8.5.2	Identification & Traceability	Product Lot Traceability is required from raw material to finished product.	5.3.9
8.5.3	Property belonging to customers or external providers	Modine- owned or Modine Customer- owned shall be identified and marked per Modine requirements.	
8.5.4	Preservation	Packaging and labelling shall be compatible with how the product will be used by the Modine manufacturing facility and as defined in this manual, or as defined in the Modine Material specification.	6.4
8.5.5	Post -delivery activities		
8.5.6	Control of changes	Change Management criteria provided.	5.4.2
8.6	Release of Products and services	Product cannot be shipped to Modine until the submitted PPAP/PSW is approved and the approved PPAP/PSW s returned to the supplier. Annual Layout Inspection and functional testing according to chapter 5.3.8	5.3.6 5.3.8
8.7	Control of non-conforming outputs .	<p>The supplier shall inform the Modine Plant quality group and obtain approval prior to performing rework which is included in the control plan .Reworked products according to the control plan should be identified in a manner approved by the Modine receiving plant to facilitate traceability.</p> <p>A Modine approved deviation permit is required prior to shipment of any non -conforming product or material by the supplier.</p> <p>When Modine identifies a nonconformance , the supplier is required to respond using the corrective Action Report-8D disciplined problem solving method. 8D Response time on Containment Action within 24hrs and Root cause analysis within 2weeks.</p>	4.4.1.& 4.4.2
9.0	Performance evaluation		
9.1	Monitoring , measurement, analysis and evaluation		
9.1.1	General		
9.1.2	Customer Satisfaction		
9.1.3	Analysis and evaluation.		
9.2	Internal audit		
9.3	Management review		
9.3.1	General		
9.3.2	Management review inputs		
9.3.3	Management review outputs		
10.	Improvement		
10.1	General		
10.2.	Nonconformity and Corrective action	Supplier is required to respond using the corrective Action Report-Modine Global 8D disciplined problem-solving method.	4.4.1
10.3	Continual improvement		3.4