The Packaging Playbook

MERITOR

Guidelines to Foster Value in Meritor Supply Chain
Reference Document 6.1 [2015]

Contents

1. Introduction and Policy

The **Packaging Playbook** establishes guidelines for packaging systems used across Meritor supply chain. Adhering to this manual will ensure:

- Appropriate quality packaging and labeling so that materials and products move in damage-free condition.

- On-time delivery of great high-value Meritor products, within optimal costs.

- Safety conditions for Meritor employees, customers and suppliers.

- Compliance to regulatory aspects set forth by Industry.

Current **Packaging Policy** establishes:

- Compliance to guidelines is mandatory for all Suppliers and will be monitored by each Meritor receiving site.

- Failure to comply with these results in charges for repacking and returning of materials unless other specified by Meritor.

- When developing or improving products the incurring parties address Packaging standards and specifications.

- Also, changes to current packaging must go through trial shipments before approval. Exceptions must first get written acknowledgement by the Packaging Team.
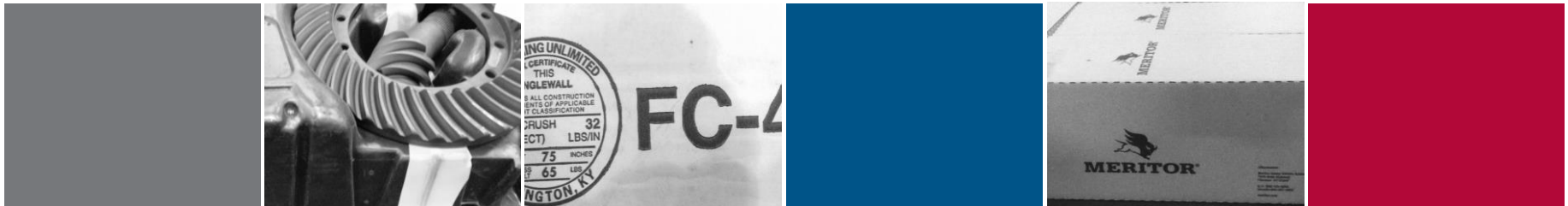
2. AIAG Standards
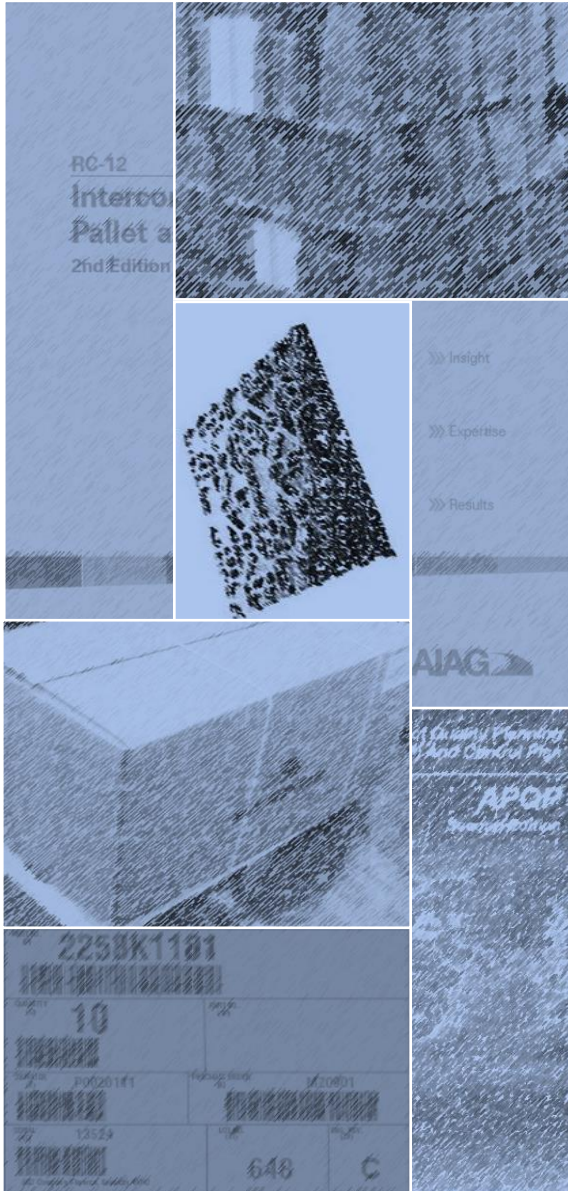
Meritor supports compliance to the Automotive Industry Action Group (AIAG) for packaging requirements:

- Bar Code and Two-Dimensional Symbols for Shipping, Transport and Receiving Labels (*I15394-09*)

- Guideline for Manually Handled Containers (*OHS-4*)

- Intercontinental Pallet and Carton Standard (*RC-12*)

- Labeling and Direct Product Marking with Linear Bar Code and Two-Dimensional Symbols (*ISO 28219:2009*)

- Linear Bar Code and Two-Dimensional Symbols for Product Packaging (*I22742-05*)

- RFID-Enabled Labels and Packaging Supporting ISO/IEC 18000-6C (*I247291-08*)

- Solid Waste Management Packaging Material Guideline (*RC-7*)

- User's Guide for Corrugated Plastic (*RC-4*)

Refer to http://www.aiag.org for further information.

- Use 6" x 4" labels.

- Include dimension numbers with readable characters and readable barcodes using Code-39 for all fields. [Exceptions: Part Description and Engineering Level]

- Place 2 identical labels with same data on container, each one over adjoining sides. Place at 1"-3" from edges.

- When needed, place 1 "MIXED LOAD" label for more than just one part number coming inside the packaging set.

- Refer to AIAG's standard B-10. ["Trading Partner Labels Implementation Guideline"]
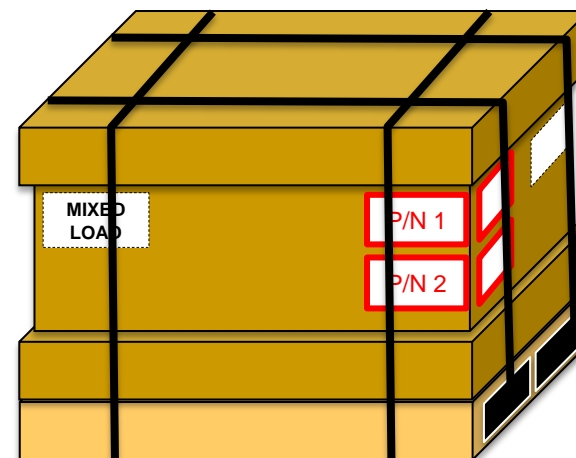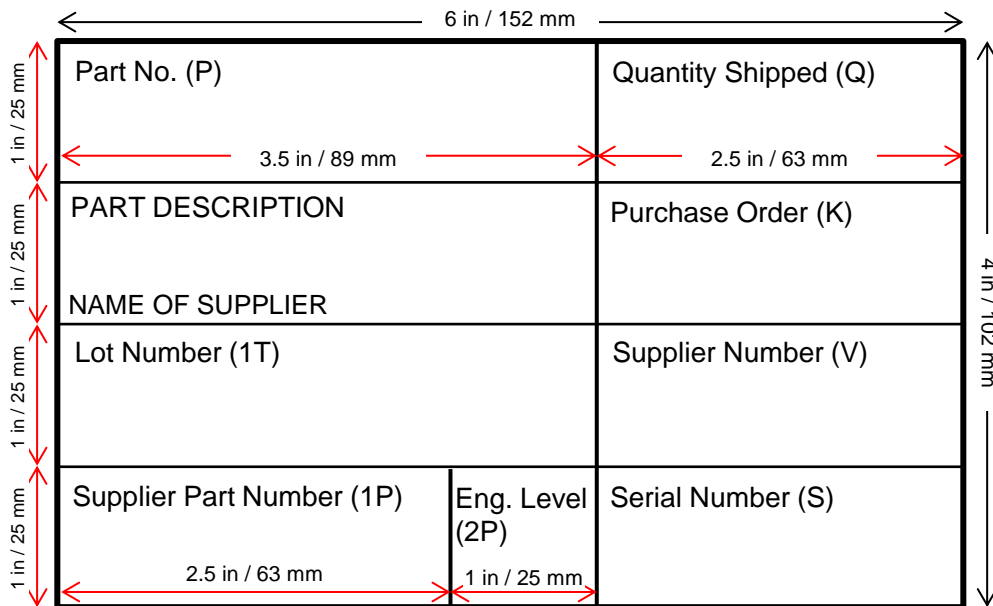
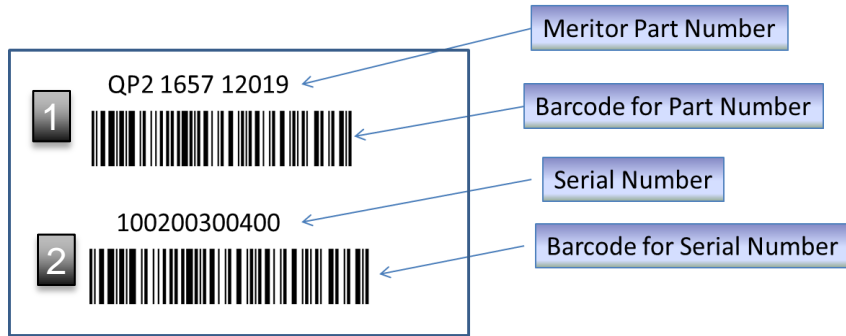Part number and corresponding (1) barcode below it (2) Serial number and corresponding barcode below it

Meritor Part Number

1 QP2 1657 12019
Barcode for Part Number

Serial Number

2 100200300400
Barcode for Serial Number

Serial Number (for individually labeled component)

-or-

Lot Number (for label on dunnage)

Must be AIAG B-10 compliant, with the exception of having no data identifier in either the human- readable or barcode fields. The supplier shall format both the human-readable and the barcode fields exactly as it is formatted as shown on the purchase order

Acceptable examples:

- QP2 1657 12019, that matches the Meritor PO and part number format
- QP2-1657-12019, AND barcode includes dashes that matches the Meritor PO and part number format

Unacceptable examples:

- QP2-1657-12019, unacceptable to include dash characters unless dashes are also included in barcode.
- QP2165712019, unacceptable to remove blank spaces
- 12019, unacceptable to truncate the part number
- P) QP2 1657 12019, unacceptable to include a data identifier
- QP2 1657 12019 rev B, unacceptable to include revision level

3.1 Part Labels cont.

Additional Requirements

- Be no smaller than 0.75 x 0.75 inches (upper size limit is based on the size of the component part)
- Have 0.10 inch white space on all four sides
- Have human readable font above the barcode for Meritor part number and serial number
- Label shall have white background, non-glossy finish
- Supplier shall propose label location(s) and get agreement from Meritor
- Supplier must place barcode label in a location that will ensure no transportation damage
- Supplier must ensure label material will not tear, mark, become non-scannable or fall-off due to normal handling condition
- Barcoded label shall be sent to Laurinburg facility quality for approval
- The supplier is responsible to ensure correct barcode label is applied to the component. Mis-identified and mis-labeled components along with all containment and correction costs will be billed back to the supplier as part of Meritor's normal supplier quality process

4. ISPM Rule

Meritor requires that all wood packaging materials shipped to its operations in North America comply with the phytosanitary rule described in ISPM 15 under the International Plant Protection Organization. ISPM stamp must be clear and visible.

ISO 2-letter country code
[e.g. US / CA / MX / BR / TR / CN / ID / GB]

Unique NPPO registration number

IPPC Logo

IPPC

XX NNN
YY

Inspection Agency Logo

Treatment abbreviation
[HT / MB / DH]
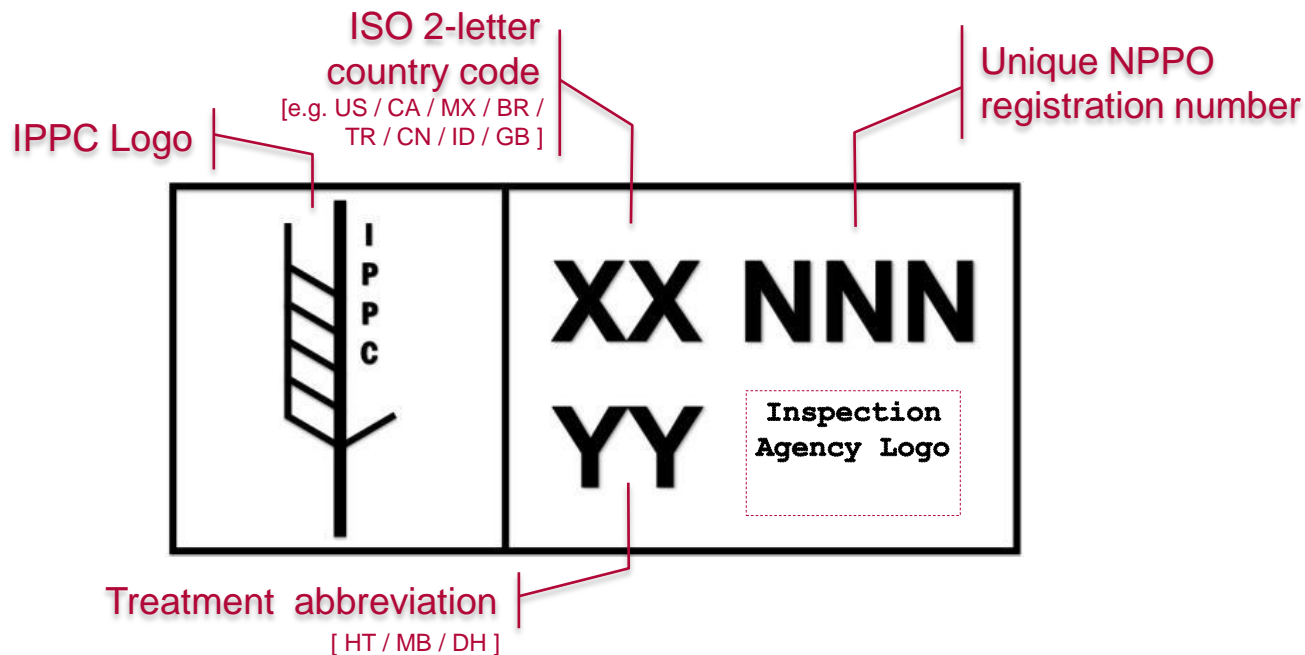
On September 16, 2005 the *U.S. Customs and Border Protection* (CBP) began enforcing import regulations as per the *United States Department of Agriculture's* (USDA) *Animal and Plant Health Inspection Service* (APHIS) rule for **wood packaging material** (**WPM**). **The rule mandates WPM, such as pallets, crates, boxes, and dunnage used to support or brace cargo, to be treated and marked**. "Treatments" over WPM intended to eliminating pests are (1) HT-heat treatment to a minimum wood core temperature of 56ºC for a 30 minutes at least, (2) MB-fumigation with methyl bromide, (3) CPI-chemical pressure impregnation and (4) KD kiln-drying. The "Mark" is (1) the ISO 2-letter country code followed by (2) the unique *National Plant Protection Organization* (NPPO) registration number assigned to the WPM producer, (3) the abbreviation for treatment method and (4) the *International Plant Protection Convention* (IPPC) symbol. Noncompliant WPM will be subject to immediate export along with accompanying cargo. This action may be subject to applicable fees and corresponding penalties. **Refer to the latest release of "***ISPM No. 15 – Guidelines for regulating wood packaging material in international trade***"** for details; this standard is available in IPPC website: http://https://www.ippc.int under 'Adopted Standards (ISPMs).

5. Sustainability

Meritor strives to be best in industry for packaging sustainability. Packaging design, choice of materials, processing and life cycle are all taken into consideration as part of a packaging economy model aimed to increase sustainability.

All suppliers are required to include sustainability when shipping new or existing products to Meritor. Returnable packaging will be the preferred shipping system if the business case allows for it.

Visit http://www.sustainablepackaging.org for more information on sustainability in the packaging field.
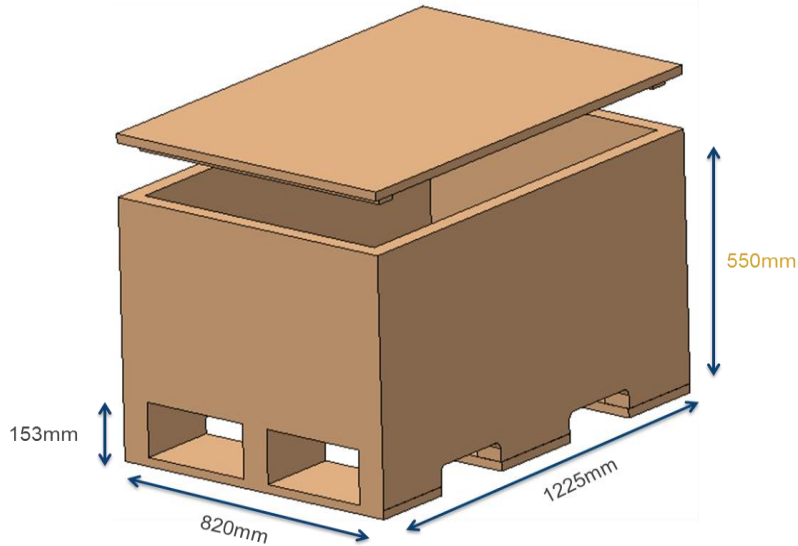
11. Roles & Responsibilities

Incumbent functional areas own **Roles & Responsibilities** around packaging to ensure compliance, to minimize costs, and to achieve Meritor strategies and goals.

MANUFACTURING SITES

Receive, sort, reuse and/or dispose packaging items in each facility depending whether returnable or disposable

PURCHASING

Team with the Packaging Group regarding packaging systems to be negotiated and agreed for use by Suppliers

SUPPLIERS

Use approved packaging systems required by Meritor when shipping parts to Meritor Sites or to Meritor Customers

REGULATORY AND EH&S

Involve the Packaging Group when pursuing compliance, and sustainability of parts and products by means of packaging

PACKAGING GROUP

Provide expertise, assessment and definition to packaging systems through the Packaging Cycle

PLANNING AND LOGISTICS

Track availability of packaging items in different loops and move them across the supply chain

ENGINEERING AND QUALITY

Address with the Packaging Group technical aspects of packaging when developing parts or products

INDUSTRIALIZATION AND TECHNOLOGY

Team with the Packaging Group when evaluating capacity projects affecting flow and integrity of parts and products

SUPPLIER DEVELOPMENT

Work with the Packaging Group during the course of PPAP and when introducing new Suppliers to Meritor

M550 Wood Crate


550mm
153mm
1225mm
820mm

M745 Wood Crate

745mm
153mm
1225mm
820mm

Requirements

- Must adhere to the one of the crate sizes
  - Any deviations must be approved by Meritor Packaging prior to SOP.
- Lid must be banded down, not nailed down.
  - This can be achieved by placing wood strips under the lid so that lid cannot slide.
- Crate must be nailed together, no exposed metal strapping.
- 4 way fork lift entry preferred.
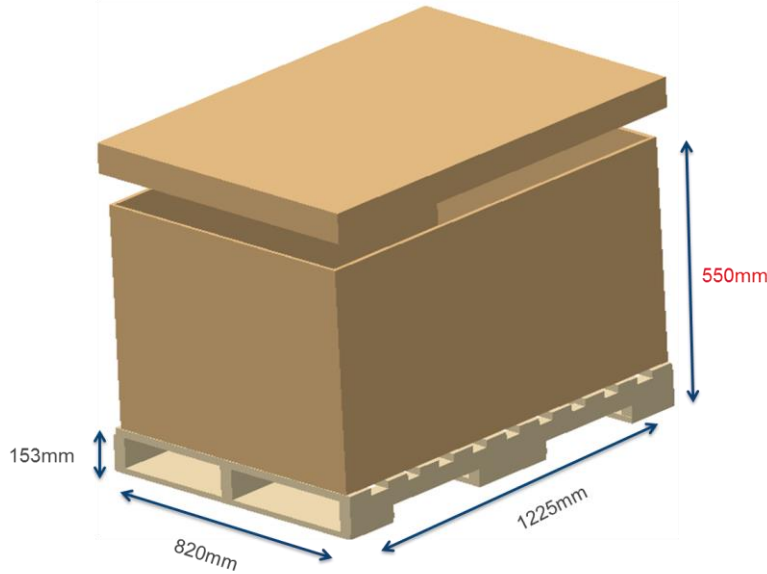- Wood must be heat treated/fumigated for export use.
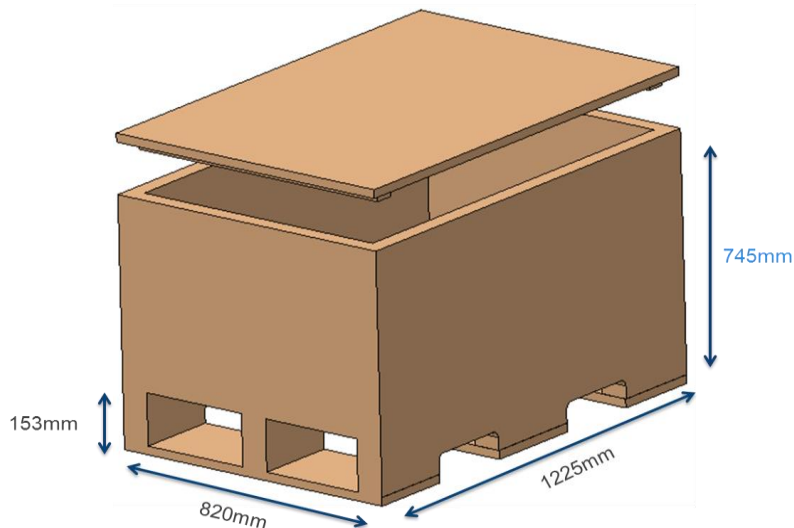
CB550 Carton on Pallet
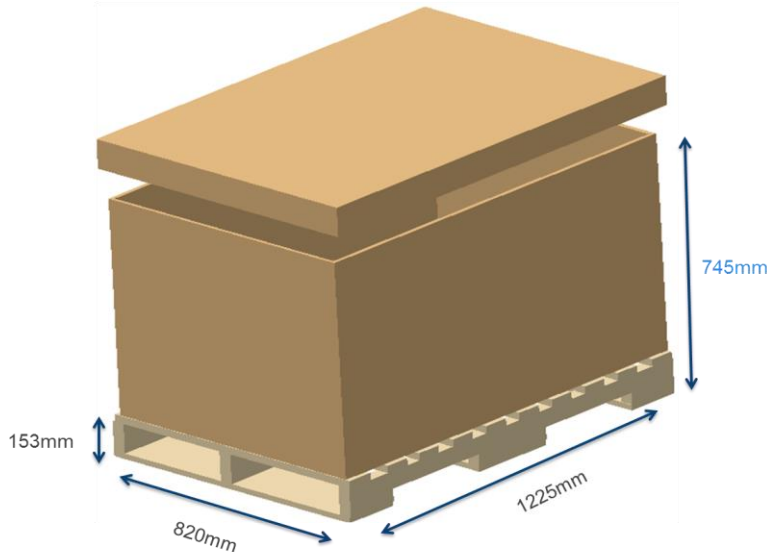
550mm

153mm

820mm

1225mm

CB745 Carton on Pallet

745mm

153mm

820mm

1225mm

Carton Requirements

- Carton must be moisture sealed to protect parts
- Carton must have a lid that is banded down
- Triple wall corrugated is preferred to ensure parts arrive safely.
- Double wall is permitted with the use of corner posts to support the load.

Pallet Requirements

- Pallets must be fumigated according to ISPM15 requirements
- 4 way entry preferred

13. Rust Prevention Best Practices

Parts shall arrive to the Meritor plant facilities free of debris (i.e. dirt, metal chips, shavings, or other particulate) that could be detrimental to the fit, form, or function within Meritor's product. Suppliers will be responsible for treating and packaging all parts in such a manner as to keep them free of corrosion and debris as specified by the print requirements

Rust inhibiting Best practices

- Use of a VCI (Volatile Corrosion Inhibitor) bag plus as necessary, VCI paper, VCI foam, or VCI pouch to impart a deposition on the parts increasing shelf life of the component without rust.

- Dip parts into a water based rust inhibitor approved by Meritor Materials Engineering according to Process Specification 703.

- Use of specified corrosion protection agents specifically identified on part drawing.

VCI is the preferred method for rust inhibiting metallic components

What is it?

- VCI is a vapor emission imparting a thin residue on metallic parts to inhibit corrosion. Vapors settle on all surfaces contained within VCI pack environment.

Why is it preferred?

- VCI does not impart residue on parts that must be removed prior to machining or assembly.

- VCI is a dry process.

- VCI can be used at intermediate processing stages to protect WIP.

VCI Best Practices

- All wood (and wood bi-product) retains moisture. Barriers between wood and metal parts must be present.

- All metal parts contained within a VCI bag must be cool (<90F) and dry prior to closing.

- All water based machining coolants must be dry before packing.

- VCI bags should be zip tied tightly closed if possible.

  - Do not tape closed unless bag is compatible with tape