

Johnson Controls Automotive Experience
Global Supplier Standards Manual
Supply Chain Management
Chapter 3
August, 2014

PURPOSE

- The purpose of the Global Supplier Standards Manual is to communicate Johnson Controls Inc. requirements to the suppliers in our Automotive Experience Division and Corporate Worldwide Headquarters. It is the expectation of Johnson Controls Inc. that all suppliers of Direct Materials comply with all of the requirements and expectations documented in this manual.
- Johnson Controls Inc. expects this manual to provide the foundation for our working relationship with our Suppliers. We will strive for excellence through continuous improvement in the products and services we receive through close working relationships with our suppliers.

SCOPE

Geographic Applicability-

- This policy applies globally to all Johnson Controls Inc. Automotive Experience (AE) Manufacturing and Parts Distributions locations that are involved in the purchase of products and services for use internally or resale.

STANDARD PRACTICES

- The **Supply Chain Management** Chapter of the Global Supplier Standards Manual was developed to present a minimum set of requirements to current and potential suppliers.
- The main chapter is divided into fourteen specific areas
 1. Supply Chain Management Expectations
 2. Electronic Commerce
 3. International Shipping
 4. Shipping and Replenishment Performance
 5. Labeling Requirements
 6. Discrepant Material Reports (DMRs)
 7. Logistics Requirements
 8. Cumulative Maintenance
 9. Balance Out and Claims Process
 10. Replenishment Methodology Requirements
 11. Materials Management Operations Guideline
 12. Security
 13. NAFTA and Trade Agreements – North America Only
 14. Packaging- North America Only

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Change Log

Date of Change	Section	Description of Change
August 2014	<ul style="list-style-type: none"> • 3.0 Special Notes • 3.2 Inco Terms – bullet point #2 • 3.7 Harmonized Tariff schedules usage (HTSUS) • Section 13.0 NAFTA • 13.5 - Removed Section • 4.0 Packaging • 2.1, 2.2, 3.2, 4.2, 7.7 	<ul style="list-style-type: none"> • NAFTA is now in Chapter 13 (not 14) • Removed reference to #2 (item listed in #1) • Added contact & phone number to item #3 • Updated; <ul style="list-style-type: none"> • 13.3 Removed completely and replace with Training <ul style="list-style-type: none"> ○ 13.4 Removed completely and replaced with Scorecard Performance • Removed section 13.5 Questions • Changed from North America to Americas – includes South America • Added Note: Not Applicable South America

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1.0 Supply Chain Management Expectations Introduction

1.1 Introduction

The supply chain organization at Johnson Controls AE contributes to manufacturing excellence in quality, cost and delivery to the customer. In particular, the supply chain function assures the on-time delivery of component material and shipment of finished goods at the lowest cost.

Continuous improvement in our global supply chain systems is, and will continue to be, a competitive advantage for Johnson Controls. This advantage is created through the engineering and design of Lean Replenishment and Logistic Business processes, which are enabled through effective application of Lean Technologies. To fully leverage the potential of these innovative systems and processes, the knowledge and capabilities of our extended enterprise must be flexible and capable of meeting our replenishment requirements.

Total Supply Chain Management is achieved through the execution of comprehensive, common business processes and systems such as:

- TS16949 standards
- AIAG Materials Management Operating Guidelines
- Johnson Controls (JCI) Business Operating System (BOS)

The following are critical supply chain elements that must be in place to execute flawlessly:

- Communicate electronically between suppliers and customers
- Implement/Utilize Lean Manufacturing practices
- Analyze demand (830, 862, 866, etc.) –
 - Understand and react to schedule variation week to week
 - Reconcile Cums weekly

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- Compare demand to capacity
- Proactive communication through the supply chain when there are potential issues in meeting demand requirements
- Ship according to the transportation routing instructions
- Respond to the Customer specified replenishment method(s) and establish Replenishment processes to assure on-time delivery from the extended supply chain
- Respond to “issue communication” tools (DMR, MQR, etc.)
- Development of team members which focuses on: Process knowledge, technical capability, problem solving skills, and leadership ability
- Implement repeatable processes that minimize human intervention, and audit them to assure conformance using the MMOG (External supplier) or MMSA (Internal JCI Supplier)
- Identify and measure key metrics on a monthly basis, with an emphasis on corrective action planning to address metrics that don't meet goals

1.2 Scorecard Performance

There are 3 areas that JCI measures to review supplier performance within Supply Chain Management

<i>Metric</i>	<i>Points</i>	<i>Chapter</i>	<i>Description</i>
DMRd Score	5	7: DMR's	Measures on time delivery
DMRi Score	5	7: DMR's	Measures accuracy of shipment information
ASN Compliance	5	3: Electronic Commerce	Indicates whether a supplier provides ASN's with every shipment

The chapters contained in the Johnson Controls (JCI) AE N.A. Supplier Standards manual will instruct you on our expectations for your performance in order that together we may create a supply chain that executes flawlessly each and every time.

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2.0 Electronic Commerce

2.1 Introduction

Electronic Commerce Requirements - Johnson Controls and our automotive customers require EDI (Electronic Data Interchange) to be utilized by all suppliers throughout the Supply Chain. This includes the ability to receive releases (830 - weekly, 862 – daily), and send ASN's (856).

All of our initiatives, policies, and transaction sets comply with the guidelines set forth by the Automotive Industry Action Group (AIAG) / VDA. Our suppliers must have the capability to interface with us in one or more of the following options:

- Traditional EDI package
- Visibility tool (i.e. i-Supply) (Not applicable South America)
- 3rd party provider (i.e. Covisint) (Not applicable South America)

Any updates, new releases, system changes, etc. will be communicated to our partner suppliers by the Johnson Controls Supply Chain Management and Purchasing organizations.

All suppliers must develop a contingency plan for their primary EDI system. This allows us to keep both product and information flowing if the primary system fails for any reason. To inquire about the specific details of using EDI with Johnson Controls, please contact your Materials Analyst via e-mail to asg.edi@jci.com.

2.2 Advanced Shipping Notice (ASN)

An ASN is the electronic transfer of shipment data from a supplier to a customer. The customer plant utilizes the information contained within the ASN in three ways:

- Determine and confirm goods in transit.
- Verification against the shipment as product is received.
- If the supplier is ERS (evaluated receipt settlement) approved, the ASN serves as an electronic invoice that will generate payment to the supplier. (Not applicable South America)

Accuracy is imperative in order to maintain the integrity of information related to inventory records, MRP/supplier schedules, and invoice payments. ASN timeliness is

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critical to information accuracy and functionality. Failure to send ASN's will result in non-compliance on your Supplier Scorecard, the issuance of a DMR (discrepant material report), and the potential for a charge-back.

The ASN must be created upon finalization of the shipment and be received by Johnson Controls AE within one hour from the time the shipment leaves the supplier's shipping location, or prior to its arrival at the Johnson Controls (JCI) plant, whichever is earliest.

All shifts in a facility must be capable of sending the ASN to meet these requirements. Confirmation of ASN receipt is available to suppliers (contact the JCI plant for availability). In order for the ASN to be successfully transmitted to the Johnson Controls plant, the ASN must contain all of the SPECIFIED INFORMATION listed below. ASN's received without a BOL number will fail our rules and not be received, and a DMR will be issued for failure to send an ASN.

1. BOL Number (Bill of Lading)
2. Shipment date/time
3. Gross weight of shipment
4. Net weight of shipment
5. Total Bill of Lading quantity (e.g. # of cartons)
6. Standard Carrier Alpha Code (SCAC)
7. Mode code (e.g. "E" for expedite, "A" for air, etc.)
8. Pool point location (if applicable)
9. Trailer number (or air bill if it's an air shipment)
10. Packing slip number(s)
11. Ship from location (our supplier code or supplier DUNS Code)
12. Ship to location(s) (our plant code(s) including dock code(s)) or DUNS Code
13. Part number

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14. Engineering change level (Part)
15. Quantity shipped
16. Unit of measure
17. Purchase order number
18. Number of cartons shipped of each part
19. Quantity per carton EDI SPECIFICATIONS

Note: Additional requirements may be communicated to the supply base, dependent on the OEM customer's specific requirements.

2.3 Important Documents and Supplementation to Section

[JCI Interiors EDIFACT DELFOR Specs](#)

[JCI Interiors EDIFACT DELJIT Specs](#)

[JCI Interiors X12 856 ASN Example](#)

[JCI Interiors X12 856 Specs](#)

[JCI Seating X12 830 Specs](#)

[JCI Seating X12 856 Specs](#)

[JCI Seating X12 862 Specs](#)

[JCI Seating X12 997 Specs](#)

3.0 International Shipping

Special Notes - Trade Agreement reporting is now found in Supply Chain Management NAFTA and Trade Agreements (**chapter 13**)

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3.1 International Shipping Introduction

The purpose of this section is to provide suppliers of Johnson Controls, Inc. with better understanding of their responsibilities as exporters and suppliers. Our goal is to ensure that suppliers are aligned with the procedures of Johnson Controls, Inc. as we as a supply chain strive to adhere to Customs Regulations.

This section contains information regarding:

- Shipment requirements for exports to Johnson Controls (JCI)
- Warehouse & inventory requirements for international shipments
- Documentation requirements

Each supplier to Johnson Controls, Inc. is responsible for complying with all customs laws and regulations as it relates to their activity with Johnson Controls, Inc. This includes, but is not limited to, the items outlined in this manual.

3.2 Inco Terms

Johnson Controls (JCI) uses one of two INCO terms for international shipments.

1. **FCA** (free carrier), where the named place is the shipping location or export port. The seller / supplier will be responsible for:
 - loading material onto transport vehicle
 - providing all necessary paperwork such as export licenses, documentation, authorizations
 - check that the quantity and quality of the goods are in conformance with the submitted documentation
 - provide appropriate packaging and markings

2. **DDP** (delivered duty paid), where the named place is the Johnson Controls (JCI) receiving location. The seller / supplier will be responsible for all items listed in #1 above, inclusive of inland freight and any duties/fees payable for import until it reaches the destination. If your shipments will be utilizing a different INCO term, you will be notified by the buyer, materials manager or logistics analyst. **(Not applicable South America)**

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3.3 Warehouse and Inventory Requirements

In order to minimize the risk of an inventory stock-out and to support lean manufacturing, our strategy is to utilize a regional warehouse/domestic pick-up point to manage and retain buffer stock inventory for certain international supply chains.

A supplier may manufacture overseas, but they are expected to import to their own domestic warehouse or distribution center. Johnson Controls (JCI) will then pick up the freight at the named domestic facility. If a supplier does not have a domestic presence, Johnson Controls (JCI) will be the importer and will recommend the 3rd party warehouse provider with whom the supplier should contract to manage the buffer stock. Johnson Controls (JCI) will determine on a case-by-case basis when this requirement is necessary and will notify the supplier to implement these requirements.

3.4 Custom Brokers

Johnson Controls, Inc. has designated Customs Brokers to clear shipments on our behalf. Suppliers must use the designated broker as per the routing instructions set forth by Johnson Control's corporate offices.

3.5 International Shipment Documentation

Suppliers are responsible for providing complete and accurate documentation for all international shipments. Documents must be sent with each cross border shipment. Documents include, but are not limited to, the Bill of Lading, Packing List, Commercial or Pro-Forma Invoice, and a Certificate of Origin (NAFTA or other as requested) where applicable. Incomplete or inaccurate documents may delay the timely delivery of product to a Johnson Control's facility; therefore, failure to supply complete and accurate documentation will result in a supplier DMR and a debit for the cost incurred in a delayed shipment.

3.6 Valuation of Merchandise

Suppliers are responsible for stating the proper value of the product being shipped per the terms and conditions of your contract with Johnson Controls. Failure to do so may result in a DMR and subsequent DMR debit charge.

3.7 Harmonized Tariff Schedules usage (HTSUS)

All suppliers are required to show the proper tariff classification on the commercial or pro forma invoice.

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Commercial or Proforma Invoice

A commercial or pro forma invoice shall accompany each export to a Johnson Controls facility (see attached). Contents of invoices and general requirements:

1. Port of entry to which the merchandise is destined.
2. Complete name and address of consignee, along with the plant ID # (see Transportation/Billing Requirements section, Facilities Listing link of this manual).
3. Complete name and address of shipper, including tax ID#. **Include contact name & phone number**
Complete name and address of the customs broker
4. Ship date
5. A detailed description of the merchandise, including the Johnson Controls part number. It is very important that the Johnson Controls part number is listed so that Johnson Controls, as the importer, can apply proper HS Classification and NAFTA eligibility. Do not modify the Johnson Controls (JCI) part number (e.g. add a suffix or prefix). If shipment involves equipment, the invoice must also include the serial # and make & model #.
6. Quantities, weights and unit of measures of the merchandise shipped. (e.g. liters, gallons, kilograms, lbs...)
7. The purchase price in the currency of purchase.
8. Value of each item in the currency in which the transactions are usually made.
9. Type of currency.
10. All charges upon the merchandise itemized by name/category and amount.
11. All rebates, drawbacks, bounties, separately itemized, allowed upon the exportation of the merchandise.
12. Country of origin.
13. Assists, dies, molds, tools, engineering work and cost associated.
14. Tariff classification number.
15. INCO terms see section 4.2 of this section.
16. Invoice #
17. Declaration of truth

Invoice and all attachments must be in the language appropriate for the country of importation. When the above contents are excluded from the invoice, the customs clearance of the shipment is delayed. Often times a shipment is flagged for examination by customs due to the absence of values, description, and country of origin.

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Special Notes:

- Equipment has to be invoiced separately from Raw Material.
- Equipment has to be separated on different skids from Raw Material inside the cargo.
- Invoices must be sent at the time of dispatch of the shipment from origin with an ETA report (Estimated Time of Arrival), specifying the following:
 - Trailer Number
 - Quantity of bundles or skid
 - Time of estimated arrival
 -

3.8 Country of Origin Marking

Every article of foreign origin (or its container) shall be marked in accordance with the regulations of the importing country.

3.9 International Shipment Checklist

1. Completed Bill of Lading with the name and address of the shipper, the consignee, and the broker. This must be the same BOL # as on the ASN.
2. Completed Packing List
3. Completed Commercial or Pro-Forma Invoice per guidelines listed above.
4. Completed Certificate of Origin or NAFTA certificate
5. Completed Annex 18 & Certificate of Manufacturer for suppliers shipping metal sheets, steel piping, and textiles (fabrics, zippers, heaters, leather) to Mexico.
6. Completed Shipper's Export Declaration for shipments to Mexico or an authorization for the Mexican Customs Broker allowing them to complete the form.
7. Completed Textile Declaration for shipments into the US only of rolled goods or cloth.

3.10 Important Documents and Supplementation to Section

[Commercial Invoice Example](#)

4.0 Shipping and Replenishment Performance

4.1 Introduction

The standard for Johnson Controls (JCI) suppliers is 100% on time arrival of all parts required by the JCI manufacturing site. This means shipping the correct quantity of the

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correct product to the correct location according to the designated replenishment method. It is mandatory that the supplier contact the JCI plant immediately upon recognition of an issue if the release schedule cannot be met. The supplier shall have a process in place to ensure that any potential problems that could impact the Johnson Controls (JCI) AE operations are communicated as soon as they are identified. Differences shall be resolved with appropriate customer contact prior to shipment time.

It is our expectation that the supplier procures/produces to the high point of the forecast for authorized raw/fab, respectively. Notify your Johnson Controls (JCI) materials manager if you receive 2 or more subsequent releases which show a decreasing authorization.

Suppliers are expected to receive forecasts and releases electronically, and to process them without manual entry. Reference the Johnson Controls (JCI) AE Electronic Commerce document for further details on electronic transmissions.

In the event a supplier does not receive a weekly release from Johnson Controls (JCI), they must verify with the plant materials scheduler or manager that no release was sent, escalating the call if necessary for verification. If after multiple attempts (must include BOTH e:mail AND phone call) the supplier is not able to contact JCI to verify release status, the supplier is authorized to use the most recent release to ship to JCI, following established guidelines for shipping to cum required by given dates.

4.2 Forecast Expectations

The forecast will grant fab & raw authorizations per the commercial terms between Johnson Controls (JCI) Purchasing and the supplier. JCI will grant the supplier a raw and fab authorization in accordance to the authorization being provided by our customer. For example, JCI may grant 4 weeks raw and 2 weeks fab, for a total of 4 weeks (i.e. you're authorized to convert 2 weeks of the raw, not carry an additional 4 weeks raw). This will be provided to the suppliers via EDI in their releases. Certain commodities may be granted different standards per their release. When EDI is not available alternate forms of communication will be utilized as determined by the Johnson Controls plant. Deviations from the standard must be authorized by JCI and will be communicated in the purchase order as well as the release.

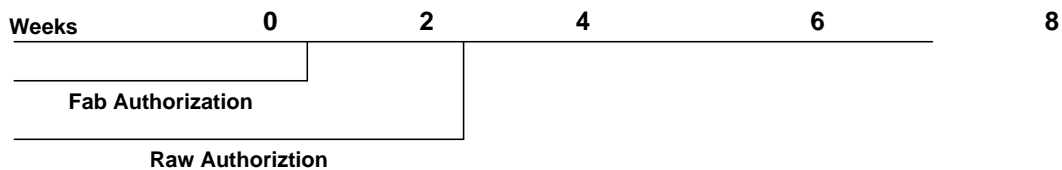
Johnson Controls has a central forecast department for electronic contract manufacturers. Contract manufacturers will receive periodic forecasts via e-mail which show the forecasted quantities over a predetermined horizon. The expectation is

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contract manufacturers will use this forecast to drive component planning/purchasing in order to meet the delivery signal sent by our manufacturing plants. The actual delivery/ship signal will be sent according to the process described below in section 5.3. This central forecast will override any EDI 830 forecast data sent by a JCI manufacturing plant. **(Not applicable South America)**

Each Johnson Controls plant may or may not require the supplier to ship according to the forecast release, and will contact the supplier to set this protocol up if it's the desired method of delivery. In other words, the forecast release may also serve as the delivery signal. **(Not applicable South America)**

The authorization on a release is Johnson Controls' financial commitment for released material. See diagram below for illustrative definition:



The above illustrates two weeks of authorization for fabricated parts, and an additional 2 weeks of authorization for raw components. JCI would purchase up to 4 weeks of product, 2 of which could be fabricated/value-add state.

Authorization for a cum amount and the lead-time required for a shipment are not synonymous. Lead-time is defined as the amount of time between recognition of an order and receipt of the order (can include manufacturing time as well as transportation time). This doesn't translate directly into the amount of weeks Johnson Controls (JCI) will provide financial commitment in a cum authorization.

4.3 Shipping & Delivery

Authorization to ship specific product will be communicated to the supplier through Johnson Controls (JCI) plant designated replenishment method (MRP, KanBan, min/max, sequence). Within 90 days from SOP JCI will notify the supplier of the designated replenishment method. During launch or pre-production we will use MRP or spot-buys. Note: Replenishment method may vary from plant to plant. Please reference

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chapter 12, Replenishment Methodology, for further details on JCI's standard replenishment tools.

A "Delivery signal" will show either a ship date or a delivery date. A delivery date defines when the goods are to be ultimately received by Johnson Controls (JCI). A ship date indicates the date which the supplier should ship the goods. In this context the delivery date does NOT mean delivery to carrier. The supplier is expected to understand transit time and have product ready for shipment in order to meet the delivery date on the schedule, inclusive of transit time. Contact the Johnson Controls plant if you have any questions as to which date is being transmitted.

The supplier is required to:

1. Take ownership for all parts manufactured for Johnson Controls AG.
2. Control its processes to assure that the physical shipments correspond with the Johnson Controls (JCI) demand.
3. Have the ability to meet either a 15% week to week net schedule increase or a 15% cum increase over the period authorized under the raw and fab authorization. This does not apply once the supplier has been notified of a balance out. For an example of how Johnson Controls calculates this value, refer to the "Diamond" file attached at the end of this document.
4. Contact Johnson Controls plant Materials Representative(s) if supplier is unable to meet the replenishment schedule, and supply the following information:
 - a. Date the parts will be available.
 - b. Suppliers plan to get back on schedule. Assign the necessary resources to resolve any delivery issues.
 - c. If an established window time is missed or release schedule cannot be met, contact your JCI plant representative for agreement on necessity of expedites.
 - d. Obtain approval from Johnson Controls for the mode & carrier chosen. Every effort must be expended to reach agreement on the expedited freight responsibility at the time of shipment. If the supplier is responsible, the freight must be shipped "PREPAID" and the supplier may choose their logistics company; however in North America it is strongly recommended that ActivePTM (888-786-4321) is contacted. The supplier is also responsible for tracking the in-bound freight to JCI and advising the JCI plant Material Representatives as to shipment status.

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A supplier will be held responsible for downtime and other associated costs (i.e. Premium freight or charter costs) due to their inability to meet delivery requirements, in accordance with the purchasing terms and conditions. If a supplier is behind in their ability to meet the required cum, the TRIM Business Unit (EDIASA & TechnoTrim plants) expects the supplier to have the cum caught up by the Monday following the lead time authorized. For example, if the authorization is for 6 weeks then the supplier should have the cum required produced and delivered no later than the following Monday by 8am EST.

4.4 Important Documents and Supplementation to Section

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5.0 Labeling Requirements

5.1 Labeling Introduction

The adherence to these labeling requirements, as well as the packaging requirements also stated within the Johnson Controls AE Supplier Standards manual, is mandatory and will be continuously monitored. Non-compliance to these instructions will be brought to your attention through the issuance of a DMR (Discrepant Material Report) by our receiving plant.

Suppliers must ensure that all materials shipped to Johnson Controls AE are correctly labeled and that the labels are properly attached. When labeling, verify that there are two labels per container on adjacent corners. The label must be placed in the upper left-hand corner of the major side. Whenever possible the label printing should be a bold black type with at least 25mm high letters. No more than one part number is to be packaged in a container or shipped on a pallet. Supplier owned packaging with "Return to" labels must be located in a clearly visible area that does not interfere with the production identification labels.

Label protection against moisture, weathering, abrasion, etc., may be required in harsh environments and is encouraged wherever practical. Care must be taken to assure that labels meet reflectivity and contrast requirements and can be scanned with contact & non-contact devices.

It is the supplier's responsibility to remove labels on returnable containers & affix a new label prior to shipment, unless prior arrangements have been made with the Johnson Controls (JCI) receiving plant.

5.2 Part Shipping Labeling

All labels affixed to a container must contain the following information:

1. Johnson Controls Part Number
2. Quantity
3. Johnson Controls Supplier ID Number
4. Label Serial Number
5. Part Description
6. MFG Date (manufacturing date)
7. Part Revision Level
8. Lot Number
9. International Build Statement (i.e. Made in Mexico)

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10. Manufacturing Address (Actual address of suppliers final assembly plant - name should Mirror Johnson Controls (JCI) scorecard plant location description to the fullest extent possible)

All containers must have the final Johnson Controls (JCI) destination information affixed either as a master label on the skid or within their standard label format affixed to each container. Data required includes JCI site name, JCI site number (when known), Address, city, state and postal code. An example of an acceptable label is at the end of this section.

5.3 Mixed Load Labeling

When release quantities require cartons of mixed material on one pallet, a special "Mixed Load" label must to be used in addition to being labeled per Johnson Controls Labeling Specifications. All containers must be loaded to cubic capacity in order to maintain load density, package integrity, and obtain optimum transport utilization. The following criteria must be observed when shipping mixed loads to a Johnson Controls plant:

1. Cartons must be uniform in size to maintain load stability.
2. Each pallet must have material / product for only one Johnson Controls plant.
3. Avoid shipping less than a full layer whenever possible.

Johnson Controls Supplier Scheduling should be contacted to establish load quantities into their releases.

For unit load packaging that is shrink wrapped, the master label and mix load labels must be applied to the outside. When individual containers are palletized and made into a unit load for mechanical handling, the master label shall be attached to two adjacent sides of the unit load.

5.4 International Shipment Labeling

Shipments to or from countries (e.g., Mexico, US, Canada, EU) may require special labeling, other than the Odette standard. Johnson Controls should be contacted to assist in obtaining the proper labels required if needed.

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5.5 Sample Shipment Labeling

When shipping sample parts for Johnson Controls (JCI) part submission or new revision level, the "Sample Part" label must be utilized and must contain the name of the site Packaging Engineer and / or the person expecting to receive the container.

Packaging Test shipments must have a "Sample Parts" identification label placed in a highly visible area and must contain the name of the site Packaging Engineer and / or the person expecting to receive the container.

Johnson Controls' requirements for shipping labels are based on the Odette / AIAG bar-coded format. Reference the AIAG Parts Identification and Tracking Application (B-4) document and the AIAG Trading Partner Labels manual (B-10) for labeling specifications.

5.6 Label Example

The below is an example only

PART # CUPT (P) 12X45A789 		SHIPTO PLANT 21, DOCK Y XYZ CO, INC 8 GRA ND RIVER, NOVI, MI 48000	
QUANTITY (Q) 7654321 		CHANGE LETTER A	Country of origin United States
IFLR ID CUPT A.B3M (Q) 982795 		PART NAME LEFT-HAND, SEA GREEN SNARK-CONTROLLING WIDGET	
PKGID-UNIT (EB) 1948 M0925 		DATEMPG. 9/25 1998	SHIP FROM JOHNSON CONTROLS AUTO PARTS 25 JAY DRIVE TROY MI, MI 48068-1212

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6.0 Discrepant Material Reports

Special Notes - this chapter was re-written in Dec 2006 to reflect the revised DMR metrics

6.1 DMR Introduction

This procedure defines the process which Johnson Controls AE uses to communicate issues and monitor supplier performance with regards to accuracy of part shipments and accompanying documentation.

6.2 DMR Requirements

A DMR is issued when a shipment is received with one or more issues in the following categories; issues could occur at the header level, line item level or both. There are 2 DMR metrics which Johnson Controls measures:

1. DMRd : Delivery performance, based on reasons shown in **bold below**
2. DMRi: Information accuracy performance, based on remaining non-bold reasons shown below.

Level	Category	Definition
Header	Incomplete/Inaccurate Commercial Invoice	International shipment where the commercial invoice is missing info.
Header	Late Shipment against Defined Delivery Window	Entire shipment arrives after scheduled window time and was not the fault of carrier delay
Header	Missing Commercial Invoice	International shipment that was missing a commercial invoice
Header	No ASN	Supplier doesn't send an ASN for the entire shipment, or it arrives later than the shipment. Should be used for suppliers that are ASN capable or been told to be capable and have not complied.
Header	Purchase Order Discrepancy	Wrong PO# shown on the packing slip or ASN.
Header	Wrong Ship-to Address	Shipment that was sent to another Johnson Controls (JCI) facility first or paperwork lists incorrect address. DMR is issued by JCI facility which ultimately receives it (NOT by the facility who received it by mistake).

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Header	Incorrect Freight / Routing Instruction	Shipment was delivered by the wrong carrier or through incorrect consolidation point
Line	ASN Qty Different than Packing Slip	Quantity on the ASN doesn't equal the printed quantity on the pkg slip. <i>Not used for over or under shipments where a new item is shipped that didn't have an ASN.</i>
Line	Box Qty Different than Label	Quantity in the box doesn't equal the printed quantity on the label. <i>Not used for over or under shipments where a new item is shipped that didn't have an ASN.</i>
Line	Incomplete/Inaccurate Packing Slip	Parts were shipped but not listed on the packing slip/ASN, or there was missing/inaccurate data on the Pkg slip/ASN
Line	Incorrect Part Number on Label	Part number on the label doesn't match part number in the box
Line	Label Non-Conformance	Label is not printed to Johnson Controls (JCI) standards, e.g. missing barcode, missing part # or qty info.
Line	Late Shipment Against Defined Delivery Window	Item arrives after scheduled window time and was not the fault of carrier delay (could be applicable to one part that was thrown on the second day's truck. Plant should not issue an under shipment DMR when the first truck arrived w/o this part).
Line	Non-conformance to Packaging Specification	Parts arrived in expendable when should have been in returnables. Parts arrived in wrong sized containers, etc...
Line	Over shipment	Supplier shipped more pieces than required in the release; min/max; kan-ban. Assumes the ASN showed this increased qty and matches the shipment.
Line	Packing Slip Qty Different than Label	Packing slip shows 40 pieces, box / label show different quantity.
Line	Purchase Order Discrepancy	Wrong PO# shown on the packing slip or ASN; wrong freight terms used for shipment

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Line	Under shipment	Supplier shipped less pieces than required in the release; min/max; kan-ban. Assumes the ASN showed this decreased qty and matches the shipment.
-------------	-----------------------	--

6.3 DMR Communication

DMR Communication to the supplier

1. Receiving or Material Analysts' identify information quality / shipment errors as close to the time of the receipt as possible and create a DMR issue within Johnson Controls internal IRIS system
2. The Material Analyst reviews the shipment documentation and evidence of the error and determines whether the DMR is valid. When the Supplier Scheduler approves the issue, an e-mail notification is automatically sent to the affected supplier and any additional people the Supplier Scheduler has entered into the issue.

DMR Supplier Response Expectations

1. Upon receipt of a DMR, the supplier is required to complete a 4D within 24hrs, and if required an 8D (See below for 8D instructions).
2. If the supplier believes that the DMR is inaccurate or unsubstantiated, the supplier may dispute the issue, which then prompts the Supplier Scheduler to either agree with the dispute, reject the dispute and return the DMR to the supplier, or override the dispute in order to allow the 4D to progress through the system.
3. The supplier is expected to assign an internal champion to address all DMR related issues and to provide timely and accurate responses to the issues that have been identified via the DMR.
4. The supplier's DMR champion must track the suppliers DMR performance, drive corrective action for all DMR's and communicate improvement plans to the appropriate supplier personnel (e.g., Account Manager, Customer Service Manager, Materials Manager, etc.).

DMR 8D Supplier Response Expectations

1. Provide the requesting Material Analyst an initial 8-D complete through the first 4 steps within one business day. This should include identification of all potential

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causes of the problem, how the problem was communicated to the scheduler, and immediate containment actions.

2. Provide the completed 8-D to Johnson Controls within 5 business days of the DMR. Repetitive errors or chronic problems with information accuracy may result in a MQR meeting, and if not resolved could escalate to a hold on new business for the supplier.

DMR 8D Material Analyst Responsibility

1. If the Material Analyst approves the dispute, the DMR is removed from the supplier's record and considered closed. The related DMR quantity does not count in the DMR score calculation.
2. If supplier's response (either dispute or 4D) is not obtained within one business day of issuance, Johnson Controls (JCI) will consider the DMR acknowledged and close the DMR as accepted. The quantity will count against the supplier's rating for that month, and it will be noted that the supplier did not respond or dispute.
3. If there is disagreement regarding a DMR between the Material Analyst and Supplier the Material Analyst will elevate it to their Business Unit Supply Chain Engineer for mediation.

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Corrective Action

1. Unless a dispute is accepted, the Material Analyst expects the supplier to perform corrective action. The Material Analyst reviews and tracks the corrective action submitted by the supplier for each DMR issued. The Material Analyst determines if the corrective action is effective and will close the DMR. Once a DMR is closed, it cannot be disputed, cancelled or reversed.
2. If corrective action is not effective, the Material Analyst issues an MQR in accordance with the Management Quality Review Procedure.

6.4 DMR Ratings and scorecard review

Effective 2007, Johnson Controls has split the DMR Supplier Scorecard metric into 2 metrics:

1. DMRd – measures the delivery performance of your shipments. This score is worth 5 pts maximum in the supplier scorecard, and will sum the quantity discrepant for any items with the following reject reasons (shown in bold text above):
 - a. Late Shipment Against Defined Delivery Window (header or line level)
 - b. Over shipment
 - c. Under shipment

DMRd score = [total pieces discrepant] / [total pieces shipped] * 1,000,000.

2. DMRi – measures the information accuracy performance of your shipments. This score is worth 5 pts maximum in the supplier scorecard, and will sum the quantity discrepant for any items issued for the remaining reject reasons

DMRi score = [total pieces discrepant] / [total pieces shipped] * 1,000,000.

Once a DMR is approved, the metric is automatically moved from Johnson Controls internal IRIS system to the Supplier Scorecard Application. Receipt information is added each month regardless of DMR activity, so if a supplier has no DMR's in a given month, the DMR Score would be zero for that month.

The total pieces discrepant could exceed the total pieces shipped on any given shipment if there are multiple issues per shipment and/or short shipments (where pieces shipped would be zero, and pieces discrepant would be the ordered quantity).

Suppliers will be debited \$250 US dollars or 100 Euros for every closed DMR issued. A DMR Debit Memo is issued to process the charges. The original is sent to Accounts

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Receivable and copies are forwarded to the site Controller and Buyer. The Debit Memo will be processed within five days of its receipt.

The current supplier goal is to have a score less than 3750 for each of the DMR metrics, DMRd and DMRi, to receive points in your scorecard. Below is a grid showing the minimum and maximum scores per point level.

Points	Minimum Score	Maximum Score
5	0	1250
3	1251	2500
1	2501	3750
0	3751	No max

7.0 Logistics Requirements

7.1 Logistics Requirements Introduction

Logistics Requirements Johnson Controls AE- Purchasing, Logistics, or the Transport Desk (depending on the region) will determine carrier selection and routing instructions in order to effectively manage inbound freight through the careful consideration of these factors:

- Supplier location
- Product volume
- Packaging
- Transportation costs

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- Lead time

Johnson Controls (JCI) AE expects our suppliers to share in the ownership of the shipping process to ensure products are received in a timely and cost effective manner - essentially, at the right time, in the right container, at the right shipping price, to the right location. Below you will find supplier responsibilities necessary in order to fulfill our transportation requirements.

7.2 Logistics Requirements Communication

All shipments must be accompanied by appropriate documentation. Documentation may include, but not limited to, packing slip, bill of lading, NAFTA certificates, commercial invoices, CMR (EU and Asia) and hazardous materials information.

Carrier information must be included in the Advance Ship Notice (ASN) transmission to allow for trace ability and to ensure supplier compliance to Johnson Controls (JCI) AE routing instructions. When electronic generation of the ASN does not exist the supplier is required to provide a faxed copy of the shipping documents.

(Excluding EU) The supplier is responsible for contacting the appropriate carrier, freight forwarder and JCI AE materials personnel to ensure timely pick-up and delivery. It is the supplier's responsibility to set shipping window times in conjunction with Johnson Controls Inc. plant materials personnel and the carrier to ensure delivery at the JCI facility by the delivery date shown on the release.

(EU) The JCI Transport Desk sends releases. Dates in the material releases are understood to be from 08:00 in the morning of the pick-up date in order to ensure lead times.

Any failure to meet the agreed upon shipping windows that result in carrier detention charges may result in a debit to the supplier to compensate for excess carrier detention charges.

(Excluding EU) Information to be provided should include, but may not be limited to, product availability, expected delivery time, special instructions, container dimensions, and weights. If shipping less-than-truckload quantities to one ship-to location, each skid must include a label indicating the plant name and address.

(EU) JCI Transport Desk knows in advance what to collect and all related information.

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7.3 Packaging Slip Requirement

Johnson Controls (JCI) requires all suppliers to prepare their packing slip(s) in a standard format. The standard format can be found below, as well as within the forms section of the Standards Manual website.

Mandatory: Packaging slip must be attached (glue or tape) to the packaging (pallet shipment). The packing slip must be in a pouch/sleeve that protects it but also allows it to be removed by receiving plant.

Failure to comply with this requirement will result in a DMR for the shipment per the DMR procedure. Items required in a specific location include:

- Packing Slip #
- Sold To info
- Supplier Production Plant
- Ship to
- BOL #
- Customer part #
- Description
- Supplier part #
- Quantity shipped
- PO #
- Footer which includes page number and repeats the pkg slip # Packing Slip Bill of Lading Information Requirements

7.4 Bill of Lading Requirements

The following information instructs a Johnson Controls (JCI) Supplier on how to properly complete a bill of lading (BOL) form for shipments that are sent collect into Johnson Controls. Non-compliance to these requirements that result in excess freight charges to JCI will be debited back to the Supplier.

A separate bill of lading must be created for each ship-to location, even when shipping on the same carrier. Each BOL must contain a unique BOL #.

Shipper/Vendor Information

Must include: Vendor Name, Supplier ID, Street address, city, state, and zip.

Example 1

Example 2

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Akko Fasteners
 Supplier ID 302412
 6855 Cornell Rd
 Cincinnati, OH 45242

Akko Fasteners - 302412
 6855 Cornell Rd
 Cincinnati, OH 45242

Consignee and Destination

The Ultimate Consignee should be shown as: Johnson Controls, Plant name, and Plant #.

The Destination must include: Street address, city, state, and zip, and c/o where applicable

<i>Direct Shipment</i>	<i>Consolidation</i>	<i>Shipping through a Broker to Mexico</i>
Johnson Controls, Inc Maplewood #18602 East 48th Street Holland, MI 49423	Johnson Controls, Inc.– Rockwood # 18620 c/o CMAC 19661 Brownstown Center Dr. Suite 600 Brownstown, MI 48183	Johnson Controls, Inc. Ramos #18593 c/o Dicex 12110 Sara Road Laredo, TX 78042

The three examples above are not intended to replace current shipping instructions.

In addition to the above information, your BOL must include:

1. Number of Packages and/or Handling Units - If packages are consolidated on a skid, provide both package count and skid count on the bill of lading.
2. Description of shipment - Enter the description of each line item. Please note the type of package (carton, tote, barrel, etc.) and the quantity per package. Each line item must include the correct National Motor Freight Classification (NMFC) Item # and Class. This information is critical to ensure correct rating so as to avoid excessive charges.
3. Weight - Enter the total gross weight, in pounds, for each line item. Include the weights of pallets, skids or any secondary container.
4. Freight Terms – Indicate 'FOB Origin, Freight Collect' terms if Johnson Controls (JCI) is responsible to pay for the shipment. All freight shipped to JCI facilities must be shipped freight collect unless Purchase Order states otherwise or shipment is a Supplier paid expedite or routing deviation.

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7.5 Routing Instructions

Where Johnson Controls AE is responsible for paying freight charges, a routing instruction will be provided to the supplier. The routing instruction will include at least one primary carrier and an expedited carrier, and is issued by each Johnson Controls receiving location.

It is the supplier's responsibility to ensure compliance and availability. Contact your appropriate plant materials personnel if you have not received a Supplier Specific Routing Instruction. A copy of the routing instruction must be signed and returned to the Johnson Controls plant materials contact. If a Supplier Specific Routing instruction has not been issued, the supplier must adhere to the parameters in the Supplier General Routing Guide (located in the forms section of this manual).

(EU Exception) In EU, the JCI Transport desk manages a portion of the transportation, and in these instances, no routing instruction will be issued.

Plant approval must be obtained from the receiving plant materials personnel for any routing instruction deviation. Any deviation from these routing instructions without plant approval may result in a supplier debit to compensate for excess freight charges and/or administrative fees.

7.6 Premium Freight/Expedites

Any premium freight which results from a supplier event will be managed and paid for by the supplier. Johnson Controls (JCI) will not take responsibility for the set-up, management, tracking or payment of a supplier-caused premium freight event. The supplier will communicate to the plant all expedite information and provide milestone updates to keep the plant informed on the arrival of the expedited components. JCI reserves the right to take-over the management of the premium freight event if the supplier fails to communicate and effectively manage the event themselves. In these cases, the supplier may be charged for JCI's time.

When expediting freight at Johnson Controls (JCI) expense, authorization must be obtained from the appropriate JCI receiving plant materials personnel. Unauthorized expedited freight may result in debit to the supplier to compensate for excess freight charges and/or administrative fees.

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(NA) Johnson Controls (JCI) utilizes Active PTM (888-786-4321) to manage all premium freight shipments into our facilities.

(EU) Johnson Controls utilizes UTI or Flash and arrangements are made through the JCI Transport Desk.

Upon authorization of an expedite shipment, the supplier should be prepared with the following information to share with the arranging party:

1. Protect time (the time by which the shipment must arrive)
2. Ready time (the time by which the shipment will be ready for pickup)
3. Shipment terms (collect if at JCI's expense)
4. Origin
 - a. address
 - b. contact
 - c. operating hours of shipping facility
5. Shipment details
 - a. weight
 - b. dimensions
 - c. stack ability
6. Destination details
 - a. address
 - b. contact
 - c. plant number

7.7 LTL and Small Package Shipments

(NA) All Less-than-truckload (LTL) and small package shipments made at Johnson Controls expense must originate with / be routed through the Transvantage Group. This process has been developed to ensure that shipments made in these modes are routed through the low cost provider and to ensure that the BOL has the proper National Motor Freight Classification (NMFC) Item # and Class.

Suppliers are expected to register with Transvantage to gain access to the website tool which supports this strategy (see contact information below). Once registered, you will be able to establish your shipment via a phone call, fax or through the Transvantage internet website. **(Not applicable South America)**

To obtain access and schedule training contact:

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Mark Yin - Implementation Coordinator, Transvantage Group

Phone: 800-526-3972

Email: Marky@transvantage.com

Website: www.transvantage.com (must be registered to get access to LTL tool)

Failure to use the appropriate process for your region will result in a DMR and/or supplier chargeback if additional cost is incurred due to an un-authorized routing.

(EU)– LTL and Small package shipments are managed either by the JCI Transport Desk or Forwarders directly.

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8.0 Cumulative Maintenance

8.1 Cumulative Maintenance Introduction

The generation, verification, tracking and reconciliation of cums is the standard requirement for Automotive Tier 1 suppliers, including Johnson Controls AG. Cums are a way to identify the amount of product that is required to ship to your customer. Johnson Controls expects the supplier to reconcile cums upon receipt of each EDI release. Identifying and initiating the resolution process of cum discrepancies is the responsibility of the supplier. The definition and procedure is defined below.

8.2 Cumulative Maintenance Communication

Johnson Controls AE will provide the supplier with the following:

1. A starting cum of 0 upon issuance of a new purchase order
2. Last cum received quantity will be noted on each EDI release. Each shipment received will be accumulated to provide the last receipt cum received. This will include the last quantity received, date received into Johnson Controls inventory, and the supplier packing slip number received by the Johnson Controls manufacturing facility. The last receipt cum received could potentially change under the following conditions :
 - a. Subsequent receipt of shipment into Johnson Controls' inventory
 - b. Issuance of Supplier Material Return (SMR) or a Discrepant Material Return (DMR). Issuance of an SMR or DMR may result in either an increase or decrease of Johnson Controls cum received.
 - c. Cum reset (may be done annually). Supplier will be notified prior to this occurring.
3. An electronic or manual release indicating net quantity due and total cum required per due date.
4. Prior cum required quantity - this field will represent the previous quantity due.
5. Physical copy of SMR or DMR to support cum resolution.

Johnson Controls expects the supplier to:

1. Track and accumulate all production part shipments. This will become the supplier's cum shipped quantity.
2. Update suppliers cum shipped quantity when the supplier is issued a SMR or DMR.
3. Identify past due quantities - using the most current release the formula is the Johnson Controls last cum received quantity minus the prior cum required quantity.

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4. Identify Johnson Controls cum required - using the most current release formula is the Johnson Controls last cum received plus the net quantity due (If an alternate replenishment method is designated by Johnson Controls (JCI), the cum required will serve as forecast data rather than replenishment requirements).
5. Net quantity required is calculated using the most current release's cum required minus the suppliers cum shipped quantity.
6. Resolve any cum discrepancies with the appropriate Johnson Controls materials personnel immediately.

Please direct any questions regarding cumulative maintenance to your Johnson Controls (JCI) plant materials contact.

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9.0 Balance out and Claims Process

9.1 Balance Out and Claims Process Introduction

Balance Out and Claims Process - Johnson Controls believes that obsolete material claims can be avoided by minimizing lead times, strictly adhering to production schedules, and properly managing inventory received by our suppliers. Most obsolete material claims occur at the balance out of a product. Balance out is defined as end of model year as well as current model engineering changes. Our goal at balance out is to have zero obsolescence.

9.2 Balance Out and Claims Process Communication

One of the tasks in our balance out process requires the Johnson Controls materials plant representative to notify, in writing, the source supplying the components to be balanced out. Johnson Controls (JCI) notification of balance out as well as defined balance out filing parameters will take place outside of the established authorization window. Claims received after the established deadline may not be honored.

After receiving balance out notification, any supplier planning to produce a contractual minimum run order which exceeds raw/fab authorization must first receive written approval from the Johnson Controls supplier scheduler or balance out coordinator.

In the event that obsolescence occurs due to the discontinuation of a part, the following procedure must be followed to file a claim:

1. Determine the highest RAW and (FAB) fabricated material authorizations issued by Johnson Controls. To determine the highest RAW/FAB authorizations, a cumulative release history must be reviewed. The high point is the highest cumulative release for the period prior to B/O notification. See the attached example for a diagram on how to determine this. The 15% rule is no longer a requirement once a B/O notification has been issued. In addition, suppliers should refer to the "High Release" and/or their Purchase Order for RAW/FAB authorizations.
2. Fill out the "Obsolescence Claim Form" and attach the supplier management or schedule/release documents, purchase order, and any minimum run authorizations to support the claim.
3. All obsolete material must be segregated and stored, pending audit and final disposition by Johnson Controls and/or the OEM.
4. Suppliers are encouraged to submit to Johnson Controls, regardless of value. However, external supplier claims less than \$250.00 dollars may not be paid, as it is dependent upon the total claim submitted to the OEM. Claims totaling less

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than \$500.00 aggregate will not be submitted to the OEM, nor paid to the supplier.

5. Supplier must obtain Johnson Controls plant authorization in order to sell claimable material at a price lower than unit cost. The following forms can all be found in the Forms section of the Johnson Controls Supplier Standards Manual:
 - [Minimum buy Authorization form](#)
 - [Obsolescence Claim form](#)

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10.0 Replenishment Methodology Requirements

10.1 Replenishment Methodology Requirements Introduction

In order to standardize supply chains, optimize inventory levels and minimize freight expense, Johnson Controls has defined four replenishment methods to order material from our supply chain partners.

Our goal is three-fold:

1. Optimize turns, truck utilization, and prevent premium freight by using one of 4 standard methods per discrete supply chain; minimize use of other methods
2. Maximize internal & external visibility of component parts
3. Appropriate use of technology & electronic commerce to communicate replenishment signals

This means that a supplier could receive different replenishment signals from different Johnson Controls (JCI) receiving plants, and a single JCI plant could use different signals with different suppliers. A supplier should not have multiple signals from the same JCI plant, unless they are going through different stages in the product life cycle.

Why not just ONE method?

The determination of which method is used is based on many components, but to simplify this explanation it depends on the following:

1. Lean manufacturing strategy – or where the Johnson Controls (JCI) plant is at in their journey to lean manufacturing.
2. Stability of customer demand
3. Supply Chain footprint – or how close the shipping point is to the end destination.

To determine the optimal replenishment method to use for each component, Johnson Controls (JCI) plants will follow a standardized process annually or when operational or supply chain conditions shift (i.e. when a supplier moves production to another location that is geographically different than the existing supplier location). JCI will communicate these changes to the supplier as soon as possible.

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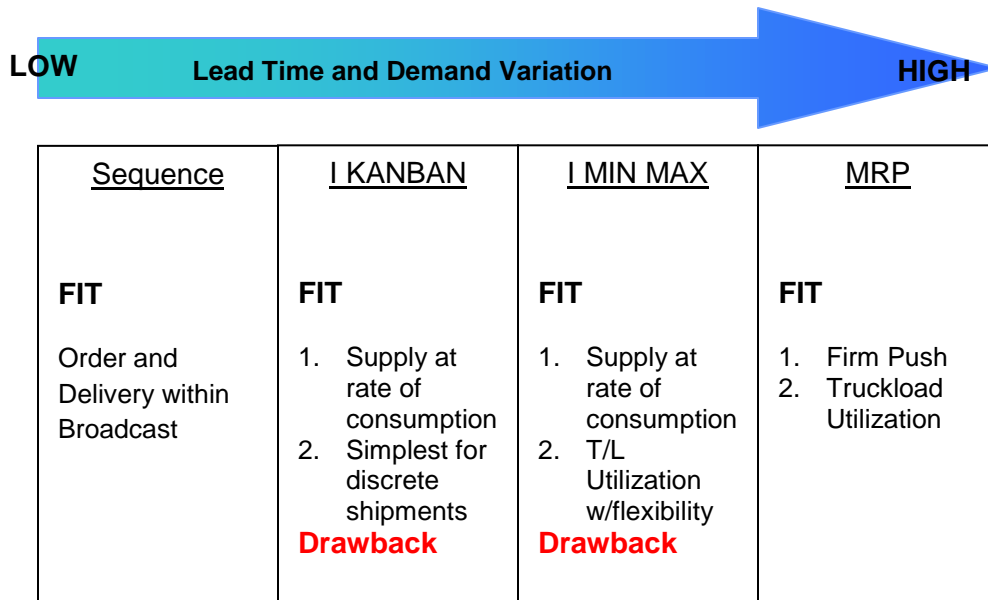
(NA Only) Suppliers who ship either in truckload quantities or as part of a milk run may be requested to utilize future forecasted demand (within raw and fab authorizations) to fill allotted space on the designated carrier. The supplier should utilize future demand from material according to priority level, e.g. a part with additional demand 2 days out should be used before demand showing due 2 weeks out. When there is a choice, the supplier should always ship the higher runner first. Suppliers not filling their allocated space may be liable for freight costs associated with lost utilization opportunities. Pulling ahead in order to fill a truck will not result in an over-shipment DMR in these instances.

The four methods are:

1. **MRP** - Use of standard EDI signal (i.e. 830 and 862) to communicate required shipment quantities. –
2. **KanBan** - KanBan may be communicated either via e-mail, internet, or through a visibility tool (i.e. Trade beam) –KanBan provides discrete quantities the supplier must monitor and use to calculate required shipment quantities.
3. **Min/Max** - Through the visibility tool, Min/Max provides a range of acceptable inventory levels the supplier must monitor and use to calculate their required shipment quantities.
4. **Sequence** - Replenishment data that is sent to suppliers to optimize truckload utilization and/or prioritize shipments. This method is commonly used when suppliers make multiple deliveries in the same day to a given Johnson Controls (JCI) site.

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The following visual shows how the different methods fit together given an increase in lead-time and/or demand variation.



10.2 Visibility Replenishment Tool used for Min/Max and I-KanBan

(NA Only) Two of the above methods (min/max and electronic KanBan) utilize the Johnson Controls (JCI) defined tool for visibility and lean replenishment. If the JCI customer plant determines that min/max or I-KanBan is the appropriate methodology, they will contact each supplier to advise them of the decision that they will be using min/max or I-KanBan.

Each supplier must then gain access to, attend training for, and work with the customer plant to define and implement the operating procedure and parameters for using the visibility/lean replenishment tool (reference [I-supply guidelines](#) for details). This requirement must be met in order to be considered for an annual award. On a periodic basis the plant will revisit the matrix to ensure their replenishment method is still optimal. If the plant determines that one of the other 3 methodologies is optimal, they will contact the supplier and work with them to implement the change.

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Exceptional Conditions Only:

The Manual Replenishment Release form would be acceptable in conditions where it is not possible to use one of the four designated Johnson Controls (JCI) replenishment methods.

- System failure, power outage, MMS failure, etc.
- Sequenced Loads: Situations where demand is communicated to the plant in the form of lots or sequenced and the plant utilizes this information to sequence material directly to the production line.
- Trailer mapping: A material map is provided to prioritize the location of material on a trailer due to limited plant floor space (warehouse on wheels), thus enabling accessibility to material that would be used first.
- Multiple Loads per day: Multiple daily shipments, i.e. 16 foam loads per day, may require JCI to prioritize the flow of material.
- Critical Requirements JCI recognizes that there may be times where demand may have to be prioritized for a supplier in critical inventory situations.

In such cases, it is acceptable to define critical inventory requirements to a supplier through a spreadsheet that simply defines and prioritizes from the existing replenishment signal requirements.

10.3 Important Documents and Supplementation to Section
[iSupply Guideline](#)

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11.0 Materials Management Operations Guideline

11.1 Materials Management Operations Guideline Introduction

The Materials Management Operations Guideline (MMOG/LE) is a global document jointly created by the Automotive Industry Action Group (AIAG), Odette representatives, OEM representatives, and automotive suppliers.

It is a document with recommended business practices for the supply chain management processes of automotive industry suppliers, and is intended to establish a common definition of materials practices to facilitate effective communication between supply chain partners.

The purpose of the MMOG/LE, as well as the reasoning behind the deployment of this by Johnson Controls Inc, is to produce one common material planning and logistics evaluation that can be used by the supplier and customer throughout the product life cycle, including the early development phases.

The MMOG/LE is being deployed with our suppliers as a self-assessment tool; although Johnson Controls reserves the right to audit MMOG/LE scores by conducting an onsite review of supplier facilities. The MMOG/LE was re-written by AIAG in 2009, and the new version is the only accepted version. It is also known under the product code "M-7" on the AIAG website.

Suppliers can purchase a download of the MMOG/LE publication or attend training on how to use the assessment by contacting AIAG on the internet at www.aiag.org, or calling (248) 358-3003.

11.2 Scorecard Performance

A MMOG/LE should be completed for each supplier shipping location (child location on the scorecard) to Johnson Controls in order to serve as a guideline in developing their materials management business processes. It only has to be submitted once per location, but on an annual basis Johnson Controls AE expects the supplier to review their status and notify the scorecard manager if the score has changed.

(US)Johnson Controls (JCI) Supply Chain Scorecard Manager:
cathy.m.robertso@jci.com

(EU)Johnson Controls (JCI) Supply Chain Scorecard Mgr: Ismael.Moreno@jci.com

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12.0 Security

12.1 Security Introduction

Johnson Controls AE is committed to ensuring the security of its supply chain. Security measures are set in place with the primary goal of preserving the safety of our employees, protecting the physical property from loss or damage, safeguarding the integrity of our intellectual property and preventing interruptions in the manufacturing process.

We expect the same approach to be taken by the supplier with whom we conduct business: to make a commitment toward the common goal of creating a more secure and efficient supply chain.

12.2 Security Procedure Requirements

Suppliers should develop and implement a comprehensive security plan throughout their operations and supply chain, following the recommendations outlined by U.S. Customs & Border Protection as part the of Customs-Trade Partnership Against Terrorism (C-TPAT), a program in which Johnson Controls AE is a certified and validated member.

All suppliers that ship across an international border to a Johnson Controls plant in North America will receive an annual Security Assessment sent from our 3rd Party provider Pinkerton. This assessment must be completed in order for Johnson Controls to complete a security risk assessment for our supply base and maintain compliance with its C-TPAT certification.

Failure to complete the assessment may result in a site visit by Pinkerton at the supplier's cost.

If an assessment shows a security risk to JCI, a site visit may be conducted by Pinkerton at JCI's cost.

If you have any questions regarding the survey you may contact

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- Richard Paulin, Pinkerton : richard.paulin@ci-pinkerton.com (415.808.1705)
- Tamara Stilwell, JCI : Tamara.a.stilwell@jci.com (616.394.8378)

http://www.customs.gov/xp/cgov/trade/cargo_security/ctpat/

The C-TPAT program covers multiple business points, including but not limited to:

- **Business Partner Requirements**
- **Security Procedures**
- **Participation/Certification in Foreign Customs Administrations Supply Chain Security Programs**
- **Container Security & Inspection**
- **Container Seals**
- **Container Storage**
- **Physical Access**
- **Visitors Controls**
- **Pre-Employment Verification and Personnel Termination Procedures**
- **Shipping & Receiving Security Procedures**
- **Cargo Discrepancies**
- **Security Training and Threat Awareness**
- **Physical Security**
- **Information Technology Security**

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13.0 NAFTA and Trade Agreements: (JCI & Joint Ventures – North America Sites Only

JCI legal entities covered by this section include the following. These entities are referred to below as Johnson Controls, Inc. and/or JCI.

- American Thierry Automotive, S.A.P.I. de C.V.
- Avanzar Interior Technologies, Ltd.
- Bridgewater Interiors, LLC
- Ensamble de Interiores Automotrices, S. de R.L. de C.V.
- Hoover Universal
- JC Clanton, Inc.
- JC Eldon, Inc.
- JCI Canada Interiors
- JCIM Mexico Properties S. de R.L. de C.V.
- JCIM US LLC
- Johnson Controls Automotive Canada LP
- Johnson Controls Automotriz Mexico, S. de R.L. de C.V.
- Johnson Controls Industries
- Johnson Controls Interiors LLC
- Recaro North America, Inc.
- TechnoTrim Inc.
- TechnoTrim de Mexico

13.1 NAFTA and Trade Agreements Introduction

All suppliers of Johnson Controls, Inc. have responsibilities relative to NAFTA and other trade agreements. This is true whether or not a supplier ships product cross border. Our goal is to ensure that suppliers are aligned with the procedures of Johnson Controls, Inc. as we as a supply chain strive to adhere to Customs regulations.

As put forth in our global terms and conditions, each supplier to Johnson Controls, Inc., is responsible for complying with all Customs laws and regulations as they relate to their activity with Johnson Controls, Inc. This includes, but is not limited to, the items outlined in this chapter of the Standards Manual.

13.2 Certification Requirements

Trade agreement or other related documents may be solicited by JCI's service provider, Sandler and Travis Trade Advisory Services (STTAS). These documents include, but are not limited to, the following: North American Free Trade Agreement (NAFTA) Certificate of Origin, Manufacturer's Affidavit, Traced Value Affidavit, American Automobile Labeling Act (AALA) certificates, Korea/US (KORUS) certificates of origin, US/Australia Certificates of Origin, as well as various MX based agreements.

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A supplier must provide their response to the solicitations by the deadline provided in the request utilizing STTAS' web portal as instructed in the solicitation notice. All responses must be complete, accurate, and signed by an authorized representative, including both the Johnson Controls (JCI) part number and the supplier's part number as shown on purchase orders. Suppliers should note that signing the various documents carries the legal obligation to advise Johnson Controls Inc. of any changes that would affect the accuracy or validity of the information. This notification must be in the form of an amended document.

If parts on a certificate are produced at more than one manufacturing location, the supplier must furnish either an Additional Plant/Shipping Location (APSL) form, or provide additional certificates utilizing the additional manufacturing locations.

Any part that is not certifiable under the trade agreement requested must be returned indicating 'not eligible' or 'non-originating' and the country of origin must be provided in the corresponding field on the document.

Please note that the traced value is required on all NAFTA responses regardless of eligibility status.

Suppliers may receive multiple requests for various parts throughout the year, and are asked to provide certificates only for the parts requested on each individual solicitation.

If Johnson Controls incurs duties/fees during importation and/or the supplier does not respond to a solicitation by the deadline given, the supplier will be debited. The debit is either a standard \$500.00 per month per supplier number charge, or the sum of all fees & duties paid as a result of not having a certificate on file, whichever is greater. In addition to direct financial penalties, suppliers that fail to comply, risk losing their eligibility for a supplier award via a supplier scorecard rating deduction and/or the ability to quote on new business.

13.3 Training

NAFTA / AALA training is strongly recommended for all suppliers. The Automotive Industry Action Group (AIAG) offers a two-day NAFTA workshop - see <http://www.aiag.org/staticcontent/education>.

STTAS also offers a public seminar/webinar series covering a wide range of trade related topics and issues throughout the NAFTA countries. For more information, please visit - <http://www.strtrade.com/events.html>

13.4 Scorecard Performance

All suppliers will start the scorecard with 5 points for compliance. Points are deducted if a location is solicited for a trade agreement (NAFTA, Aladi, AALA, etc...) and fails to respond by the due date stated on the solicitation. There are 2 scorecard values:

1. As required = 5 points
2. Late = 0 points

A supplier code will show "As required" unless during the course of the year a supplier is late with their submission to a solicitation. At that time, a debit will occur and that child location/vendor code will show "Late" in the NAFTA score. In order to receive the full 5 points on the scorecard, all child locations must receive an "As required" for their NAFTA metric.

13.6 Scorecard Performance

All suppliers will start the scorecard with 5 points for NAFTA compliance. Points are deducted if a location is solicited for a trade agreement (NAFTA, Aladi, AALA, etc...) and fails to respond by the due date stated on the solicitation. There are 2 scorecard values:

- 1) As required=no deduction
- 2) Late=5 point deduction

A supplier code will show "As required" unless during the course of the year a supplier is late with their submission to a solicitation. At that time, a debit will occur and that child location/vendor code will show "Late" in the NAFTA score.

In order to receive the full 5 points on the scorecard, all child locations must receive an "As required" for their NAFTA metric. .

13.7 Important Documentation and Supplementation

- a) [NAFTA Certificate of Origin](#)
- b) [NAFTA Certificate Continuation Page](#)
- c) [Additional Plant / Shipping Location Form](#)

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14.0 Packaging: (JCI & JCI Joint Ventures – Americas Sites Only)

14.1 General Guidelines

1. Ensuring part-quality, as well as designing, purchasing, and maintaining packaging is the responsibility of the supplier.
 - a) Any PO that does not reflect supplier-owned packaging must be modified. It is the supplier's responsibility to initiate this request with their JCI purchasing representative.
 - b) Requests for packaging piece price increases should be submitted to both the appropriate JCI packaging engineer & the JCI purchasing representative. See appendix for a list of JCI packaging contacts.
2. All efforts to meet packaging deadlines, including those for proposal submission, trial packs, packaging procurement, etc., must be made. If a deadline cannot be met, it is the supplier's responsibility to notify the appropriate JCI packaging engineer **at least one week** prior to the deadline date.
3. Packaging must be consistent with A.I.A.G specifications.
4. JCI's packaging engineers, plant personnel, and suppliers have collectively established multiple best practice standards for packaging. In doing so, great care was given in conducting trials, evaluating costs & quality, maximizing freight, tracking sustainability, etc. When considering the type of packaging to utilize for a part, suppliers should first attempt to utilize one of JCI's best practice standards for packaging. See appendix for a complete list.
5. When best practice packaging is not feasible, consider the following options for new package development, in the sequence shown below. (Sequence does NOT apply to trim & foam).
 - Option 1: Utilize a pallet to secure parts (backboards, rolls of bags)
 - Option 2: Utilize the smallest standard tote without dunnage
 - Option 3: Utilize the smallest standard tote with dunnage
 - Option 4: Utilize a standard bulk bin without dunnage
 - Option 5: Utilize a standard bulk bin with dunnage
 - Option 6: Utilize a custom tote without dunnage
 - Option 7: Utilize a custom tote with dunnage

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Option 8: Utilize a custom rack or bin

6. Returnable containers are preferred at ALL JCI Automotive Facilities. Expendable containers will be accepted ONLY under the following circumstances:
 - Fastener Shipments
 - Overseas Shipments (See Export/Expendable Packaging Section)
 - Supply Chain Disruptions (must have written approval from receiving plant)
 - Special Business Cases (must submit JCI Packaging Data Form & corresponding documentation for approval)
7. In the case of loss or damage to returnable containers, suppliers are required to keep at least 2 shipments worth of expendable back-up packaging in house at all times so as not to disrupt production at the receiving plant. Expendable back-up packaging must be similar in-size to approved returnable packaging & contain the exact quantity per container.
8. When a new program launches, all efforts to re-use existing containers should be made before any new containers are procured.
9. Returnable packaging should be designed to withstand normal handling throughout the life of the program.
10. When required, internal dunnage should consist of the most inexpensive materials to adequately protect the part.
11. Containers should be filled to capacity without exceeding maximum weight limits or compromising part quality. See container weight limits for more information.
12. All containers must be secured to pallets with either plastic banding, seat belts or stretch wrap.
 - a) The overall pallet height MUST NOT EXCEED 52".
 - b) All pallets must have 4-way entry.
13. Prior to each shipment, suppliers should ensure that containers are clear of debris and in good-working order.

14.2 Packaging Approval Process

1. Prior to launch (normally 6-12 months), JCI will send a list of parts & a blank packaging data form (PDF) to all suppliers.
2. The supplier is responsible for filling out a preliminary PDF for each unique type of packaging. (Multiple part #s may be submitted on one form if the packaging is common). Packaging forms must be submitted to the specified JCI packaging engineer by the specified due date for each program. Although suppliers should make every effort to fill out the PDFs as completely as possible, at a minimum the following information is mandatory for a PDF submission to be accepted:
 1. Program Name
 2. Supplier Name, Location & Contact Information
 3. Revision Date
 4. JCI Part # and Description
 5. Part Dimensions & Weight
 6. Container Type
 7. Container Dimensions & Weight
 8. Pallet Information
 9. Picture / Sketch of parts in a FULL PACK

**See the sample PDF in the Appendix of this manual for further details.*
3. Once the proposal form is submitted, the JCI packaging engineer will review the concept with the receiving plant's engineering, materials, & quality departments.
4. The JCI packaging engineer will approve the concept, request changes, or request a trial and notify the supplier.
5. The supplier will submit a final PDF, including the piece price & fleet-size calculation forms.

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6. The PDF is signed & packaging is authorized.

14.3 Returnable Containers

Whenever possible, all programs should use returnable packaging unless a returnable system cannot be cost justified. A container’s success as cost-effective packaging however, depends on how well it is maintained, controlled, and returned. **Factors to be considered in the decision to utilize returnable packaging should include, but are not limited to:**

- Geographical location of suppliers & receiving plant
- Product protection
- Availability of containers from previous programs for re-use
- Initial cost of container purchase
- Piece price cost for returnables vs. expendables
- Maintenance / Repair Costs
- Developing Maintenance / Repair Program
- Transportation costs
- JCI facility & equipment constraints, both line-side & warehouse
- Cube utilization (container)
- Cube utilization (truck, RR car)
- Return ratio
- Weight Limitations
- Tracking & administrative costs

**See appendix for templates which may be useful in presenting returnable packaging cost justifications to appropriate program management personnel.*

15.4 JCI Standard Returnable Containers

Standard containers should be used whenever feasible. (A list of standard containers follows).

Container Size (in)					Description	Approved Vendors
L	x	W	X	H	Totes	
12	x	15	X	4	Straight-Wall, Cross-Stack Tote	Orbis

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12	x	15	X	5	Straight-Wall, Cross-Stack Tote	Monoflo, Orbis
12	x	15	X	7.5	Straight-Wall, Cross-Stack Tote	Monoflo, Orbis
12	x	15	X	9.5	Straight-Wall, Cross-Stack Tote	Monoflo, Orbis
24	x	15	X	4	Straight-Wall, Cross-Stack Tote	Orbis
24	x	15	X	5	Straight-Wall, Cross-Stack Tote	Monoflo, Orbis
24	x	15	X	7.5	Straight-Wall, Cross-Stack Tote	Monoflo, Orbis
24	x	15	X	9.5	Straight-Wall, Cross-Stack Tote	Monoflo, Orbis
24	x	15	X	11	Straight-Wall, Cross-Stack Tote	Monoflo, Orbis
24	x	15	X	14	Straight-Wall, Cross-Stack Tote	Monoflo, Orbis
24	x	22	X	7.5	Straight-Wall, Cross-Stack Tote	Monoflo, Orbis
24	x	22	X	9.5	Straight-Wall, Cross-Stack Tote	Orbis
24	x	22	X	11	Straight-Wall, Cross-Stack Tote	Monoflo, Orbis
24	x	22	X	14	Straight-Wall, Cross-Stack Tote	Monoflo, Orbis
32	x	15	X	7.5	Straight-Wall, Cross-Stack Tote	Orbis
L	x	W	X	H	Pallets/Lids	
48	x	45	X	7	Structural Foam with Lip	Monoflo, Orbis
L	x	W	X	H	Bulk Bins	
32	x	30	X	25	2-Door Knock-Down	Orbis
32	x	30	X	34	2-Door Knock-Down	Orbis
48	x	45	X	25	2-Door Knock-Down	Orbis
48	x	45	X	34	2-Door Knock-Down	Monoflo, Orbis
48	x	45	X	50	2-Door Knock-Down	Orbis
64	x	48	X	34	2-Door Knock-Down	Orbis
64	x	48	X	50	2-Door Knock-Down	Orbis

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L	x	W	X	H	Coffin Boxes (Sleeve Packs)	
65	x	28	X	28	Top & Bottom Sleeve, Triple Wall Corrugated	Supplier Choice

1. The gross weight limit for hand-held totes is 30 lbs.
2. The gross weight limit for 32x30 bulk bins is 2000 lbs; 1500 lbs for 48x45 bulk bins & 1000 lbs for 64x48 bulk bins.
3. Container color should be a vendor standard (grey, black, blue, green) unless otherwise specified by the receiving JCI Facility.
4. Each returnable container must contain 2 Kennedy placards & a minimum of 2 supplier return-to labels. See "Labeling Requirements" for further details.

14.5 Dunnage

1. Dunnage should be used for additional part protection when required.
2. Dunnage should be designed from recycled and/or recyclable materials.
3. Dunnage should be as simple & inexpensive as possible, and allow for easy access to the parts.
4. Dunnage in totes/racks should be returnable & semi-permanently attached to the container with Velcro.
5. Returnable dunnage in bulk-bins/coffin boxes is preferred, however must be made to knock-down to maximize freight usage. Expendable dunnage costs vs. freight costs should be analyzed if returnable dunnage is not feasible.

14.6 Pallets

1. All pallets must be 48"x45" or 32"x30" (domestic) or 47"x45" or 36"x30" (overseas) according to A.I.A.G. specifications.
2. Returnable totes should ship on returnable pallets; expendable totes should ship on expendable pallets.
3. When a returnable pallet is used, a returnable top cap must be used to ensure part integrity & stacking stability.
4. Returnable pallets should be the vendor's standard color (black).
5. Expendable pallets should be made of durable materials so as not to cause a safety hazard while being handled.
6. Expendable pallets entering or leaving the US must be heat-treated. See Export Guidelines for further clarification.

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7. Pallet stack height may not exceed 52”.
8. All wooden pallets must be able to support a minimum of 2000 lbs.

14.7 Placement of Containers on Pallets

1. Place containers so that A.I.A.G labels are unanimously visible on 1 side and 1 end.
2. Each pallet should contain only one part number worth of parts; do not mix skids unless otherwise directed to do so by the receiving JCI Facility.
3. Containers must not hang over the edges of the pallet.

14.8 Shipping Bins/Racks

1. Racks should only be used when all other packaging forms – totes, bulk bins, coffin boxes, etc – have been exhausted, i.e. not feasible for the application.
2. Bins/racks should be designed to not only best suit the part, but to also best utilize the inside dimensions of a standard trailer (636”x96”x110”).
3. Bins/racks should be powder-coated the vendor’s standard color (blue, black, grey, or beige), unless otherwise specified by the receiving JCI Facility.
4. Potential pinch point areas should be painted red.
5. Racks must be stenciled in accordance with the JCI container marking standard.

14.9 Labeling Requirements

Label Placards

1. Corrugated (cardboard) boxes – Two (2) AIAG labels 4” x 6” per container. One on end and one on side adjacent.
2. Racks – Two (2) placard locations for labels on adjacent corners to hold standard 4” x 6” AIAG bar code labels.
3. Totes – Two (2) Kennedy-style placards for use with standard 4” x 6” AIAG bar code labels. One placard on each short end of the tote.
4. Pallet Boxes (large collapsible containers) – Two (2) Kennedy-style placards placed on container walls for use with standard 4” x 6” AIAG bar code labels. Placards will be placed on the short sides of the totes.

Container Marking

All container markings are to be permanent. Container markings should read “Property of Johnson Controls”.

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- **Totes** – Two (2) hot stamps, one on each long side of the container are required. Lettering should be in white and 1” tall.
- **Plastic Corrugated Totes** – 1” tall white lettering, usually silk screened, on each long side of the container is required.
- **Pallet Boxes** – Minimum of two (2) ID tags securely affixed to base of the pallet box.
- **Pallets** – Minimum of two (2) ID tags securely affixed to the pallet.
- **Lids** – Minimum of one (1) ID tag or sticker per lid. Raised or hot stamp lettering is acceptable providing that the lettering is of sufficient size and visibility to clearly identify that the container is owned by Johnson Controls.
- **Racks, trays or large bins** – Should be stenciled, painted or marked in such manner as to clearly convey ownership of container.

Supplier “Return to....” Labels

Each tote must contain a minimum of two (2) return-to labels which state “Return to Supplier xxxx, Any town, State” or other similar wording. The labels should be white with black lettering unless otherwise specified by the receiving JIT plant. Size should be approximately 6” x 1.5”. Return-to labels should be placed on containers in an area that does not cover hot stamps or bar code labels. Printing should be large enough so that it is visible from a distance.

14.10 Container Maintenance & Repair

(NA) It is expected that JCI-owned returnable containers and dunnage will be maintained, cleaned, repaired and replaced by the supplier. It is the supplier’s responsibility to account for maintenance costs in the packaging piece price. Exceptions should be noted in the Supplier Statement of Work (SSOW). Suppliers must ensure that packaging materials in need of repair or cleaning are set aside in a clearly marked area and repaired in a timely manner.

Suppliers will not be reimbursed for expendable back-up containers until all of the following are proven:

- a. Supplier purchased the fleet quantity authorized (copy of PO, delivery receipt)
- b. Supplier’s budget for maintenance & repair has been exhausted (repair/replacement costs)
- c. Supplier notified the JCI Facility of a returnable shortage prior to expendable being shipped (email)
- d. JCI Facility did not return containers as agreed upon (if applicable)

- e. Containers were lost/damaged not by any fault of the supplier (if applicable)

14.11 Domestic Expendable Packaging

- 1) Expendable container sizes must closely resemble the approved returnable container sizes.
- 2) Whenever possible, expendable packaging should be made of recycled materials.
- 3) All boxes should be RSC (regular-slotted container) style.
- 4) Boxes may be single, double, or triple wall, depending on size & weight requirements.
- 5) Boxes must be adhered with tape. Metal staples are not acceptable.
- 6) Boxes should be secured to expendable pallets using either stretch wrapping or plastic banding and fiber board corner post to secure cartons on the pallet.

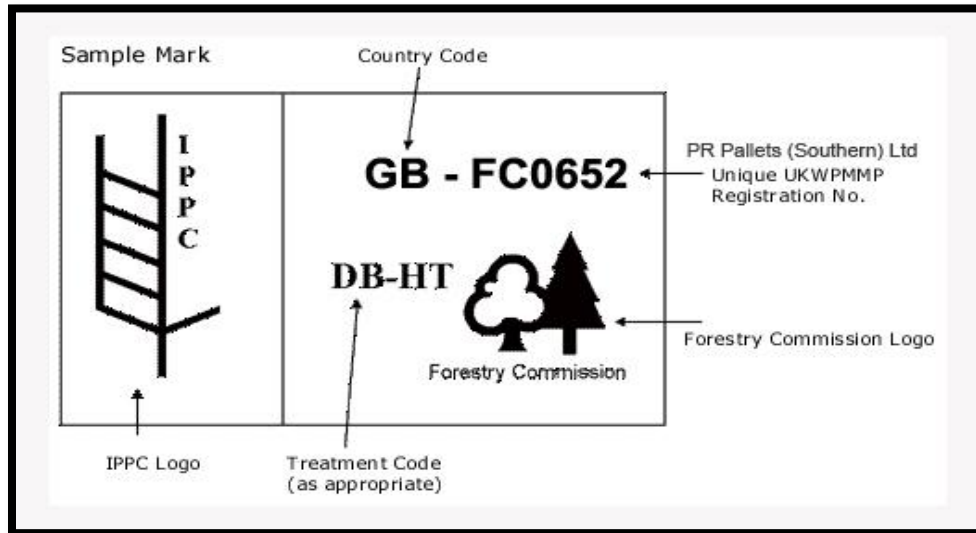
14.12 Export Packaging

International transportation modes utilize sea-container methods of transport that are different in container dimension from truck containers. Packaging design specifications have been developed to standardize container dimensions and optimize cubic efficiency in transportation. Other options beyond what is outlined below may be required by your specific JCI customer plant.

Export Pallets

1. Footprint sizes are developed to maximum sea-container cubic utilization.
 - a. **36 x 30** (in) = 915 x 762 (mm) 2-way
 - b. **47 x 45** (in) = 1193 x 1143 (mm) 4-way (Preferred footprint size)
2. All wooden pallets shipped must have flush stringer design and be assembled using cross ties. Full perimeter pallets are acceptable. Single and double wing pallets, are not allowed.
3. All wooden pallets must be able to support a minimum of 2000 lb; (907 kg) internal load capacity.
4. All wooden pallets and wooden packaging *must* conform to government and local transportation rules and regulations.
 - a. Wood must be treated and marked using the International Plant Protection Convention's (IPPC).

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- b. “Guidelines for Regulating Wood Packaging Material in International Trade” (International Standards for Phytosanitary Measures Number 15 (ISPM 15). (reference, USDA-APHIS, WPM (September 16, 2004, 69 Federal Register (FR) 55719, Docket No. 02–032–3). www.aphis.usda.gov
- c. Failure to comply with Government Regulations may have adverse liabilities. Any associated costs and/or fines incurred as a result will be the supplier’s responsibility.

Export standard cartons

Design and usage type of corrugated packaging material needs to be evaluated based on the method of transportation and handling through to the point of use. Other considerations are the packaging and transportation cost. In developing a design the following factors should be considered:

- a. Part Protection
- b. Handling Process (part orientation)
- c. Transportation Cost (cube utilization)
- d. Packaging Durability
- e. Load Transfer
- f. Storage Space

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All expendable containers *must* be filled to maximize container density of 95% to maintain cubic fill and packaging integrity during handling, as well as optimized cubic freight.

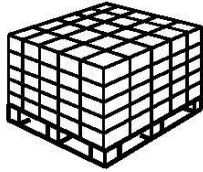
Approved Export Expendable Sizes:

Container		Exterior Dimensions			Containers Per Layer	Layers Per Pallet
		L:	W:	H:	Maximum	Maximum
	in	9	9	5.00	25 (5-5)	5
	mm	228.6	228.6	127		
	in	11.75	15	7.00	12 (3-4)	5
	mm	298.45	381	177.8		
	in	23.5	15	7.00	6 (2-3)	5
	mm	596.9	381	177.8		
	in	23.5	15	9.875	6 (2-3)	4
	mm	596.9	381	250.825		
	in	23.5	22	7.00	4 (2-2)	5
	mm	596.9	558.8	177.8		
	in	23.5	22	9.875	4 (2-2)	4
	mm	596.9	558.8	250.825		

Approved Bulk Container Sizes:

Container		Exterior Dimensions			Type	Load Capacity	
		L:	W:	H:	Grade	KG	LB
	in	36	30	22.25	HSC / RSC	340	750
	mm	914.4	762	565.15	TW		
	in	47	45	22.25	HSC / RSC	227	500
	mm	1193.8	1143	565.15	TW		
	in	47	45	29.6	HSC / RSC	227	500
	mm	1193.8	1143	751.84	TW		
	in	47	45	44.5	HSC / RSC	227	500
	mm	1193.8	1143	1130.3	TW		

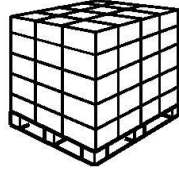
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9" x 9" x 5" carton

25/layer (5-5)

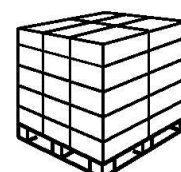
47 x 45 x 30 UL



11.75" x 15" x 7"

12/layer (12-5)

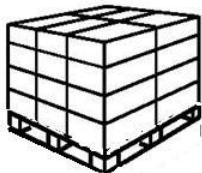
47 x 45 x 40 UL



23.5" x 15" x 7"

6/layer (6-5)

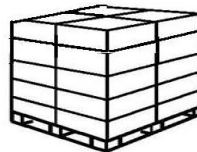
47 x 45 x 40 UL



23.5" x 15" x 9.875"

6/layer (6-4)

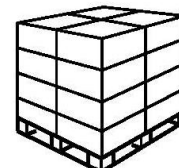
47 x 45 x 44.5 UL



23.5" x 22" x 7"

4/layer (4-5)

47 x 45 x 40 UL



23.5" x 22" x 9.875"

4/layer (4-4)

47 x 45 x 44.5 UL

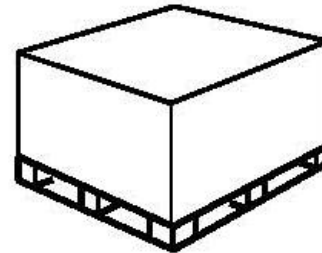
Expendable bulk container sizes:

36" x 30" x 22.25"

47" x 45" x 22.25"

47" x 45" x 29.6"

47" x 45" x 44.5"



14.13 Unit Load Stacking and Corner Supports

1. Unit load stack heights *must* be designed of sufficient strength to withstand a minimum stacking height at 89 (in) (2260 mm) under full load in transit or storage.
2. Unit load top layer *must* be configured with support in all four corners to allow for stacking in loading and storage. Void fillers or empty cartons are an acceptable practice (NA ONLY); load transfer needs consideration when using such methods.
3. **Pyramid stacking is not an acceptable practice.**
4. Standard unit load height of 22.25, 29.6 and 44.5(in) are to be maintained to assure maximum cubic transportation efficiency

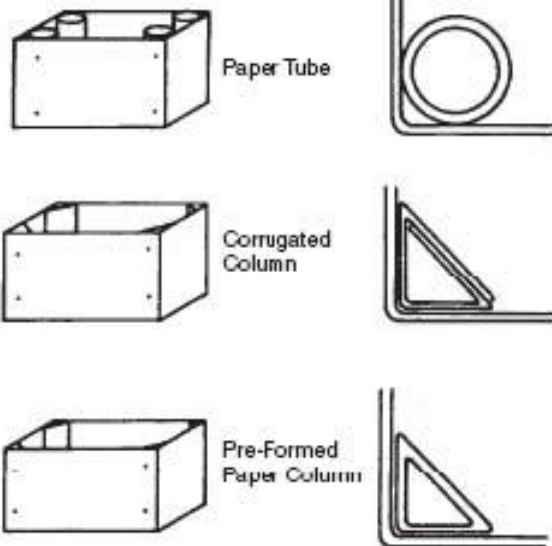
Properly Palletized Unit Load (Leveled Layers)



Unacceptable Palletized Unit Load (Pyramid)



5. When corner supports are required for stacking strength, the preferred option is corrugated; paper tubes, build-up block and roll-ups are typical. Formed Fiberboard angle board is an acceptable option. Wooden corner supports are an allowable alternative when heavy loads are applied. All wooden dunnage *must* follow the U.S Government Certification, USDA-APHIS (ISPM-15) specification.



6. It is the supplier's responsibility to secure all unit loads with adequate banding.
7. Polyester plastic strapping is the preferred method for securing a unit load of manually handled tote cartons to a pallet. Supplier is recommended to use four (4)

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way strapping practices on manually handled carton unit loads. Shrink-wrap film, (non-PVC) is acceptable and recommended to ensure load integrity. Metal banding is restricted and allowed on an acceptance basis only.

14.14 Appendix

Best Practice Packaging Standard by Commodity

The following is a list of suggested containers for typical seating components, listed by commodity. When reviewing the list, please keep in mind the need for interface with line-side storage & warehousing requirements. Actual container size requirements will be dictated by size of part, weight restrictions & storage needs.

Part Types	Primary Suggested Container	Dimensions (in)	Alternative Container	Dimensions (in)
Plastics				
Side shields	Plastic Tote	Vary	Custom plastic	Vary
Small plastics	Plastic tote	Vary	Corrugated Box	Vary
Back panels	Pallet box	48x45x34	Pallet box	32x30x34
Frames				
Bucket	Pallet Box	48x45x34	Pallet box	48x45x50
Bench	Pallet box	48x45x34	Pallet box	64x48x34
Foam				
Bucket	Bag	Vary		
Bench	Bag	Vary		
Headrest	Coffin box	65x28.5x27.5	Pallet box	48x45x34
Armrest	Pallet box	48x45x34	Custom Tote	Vary
Trim				
Bucket	Bundle	Vary	Bag (Leather)	Vary
Bench	Bundle	Vary	Bag (Leather)	Vary

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Headrest	Bag	Vary		
Armrest	Bag	Vary		
Metals and Mechanisms				
Tracks	Pallet box	48x45x34	Pallet box	48x45x34
Recliners	Pallet box	48x45x34	Pallet box	48x45x50
Risers	Pallet box	48x45x34	Pallet box	48x45x50
Towel bars	Pallet box	48x45x34	Pallet box	32x30x34
Latches	Pallet box	48x45x34	Pallet box	32x30x34
Small metals	Plastic tote	Weight driven	Pallet box	32x30x34
Miscellaneous				
Lumbar	Pallet box	48x45x34	Pallet box	32x30x34
Heater pads	Corrugated box	24x15x14	Corrugated pallet box	48x45x25
Switches & memory modules	Plastic tote	24x15x? Weight Driven	Corrugated hand held box	Weight Driven
Wire harnesses	Plastic tote	24x15x11	Corrugated hand held box	24x15x11
Air bags	Plastic tote	24x15x14		
Fasteners	Corrugated Box	9x9x9 Weight driven	Corrugated box	9x9x5 Weight driven
Flex mats	Pallet box	48x45x34	Pallet box	32x30x34
Buckles/retractors	Plastic tote	24x15x7	Corrugated hand held box	24x15x7
Headrest tubes	Pallet box	48x45x34	Pallet box	48x45x25

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SUPPLIER PACKAGING DATA FORM (PDF)

***FIELDS HIGHLIGHTED IN GRAY ARE MANDATORY; data MUST be entered into gray fields prior to submission or pdf will be returned to supplier.

Program: ***	Supplier Contact: ***	Rev Level: _____
Row or Seat Type: _____	Phone: _____	Date Revised: _____
Supplier Name: _____	_____	
Supplier Plant Location: _____	Fax: _____	
JCI Plant Location: _____	E-mail: _____	

PART INFORMATION	JCI Supplier / Part Name or Description	Tool#	Part Dimensions:		
JCI Part No.'s			Length (in.)	Width (in.)	Height (in.)
***			***	***	***
			Weight (lbs.)		

PRIMARY CONTAINER	Length (in.)	Width (in.)	Height (in.)
Container/Model #: _____	O.D. ***	***	***
Container type: _____	I.D. _____	_____	_____
Color: _____	Tare Weight: _____ (lbs.)		
Container Supplier: _____	Gross Weight: _____ (lbs.) (parts + packaging)		
Parts/Container: _____			
Dunnage Description: _____	<i>include qty/container</i>		
Layer Pads Descr: _____	<i>include qty/container</i>		
Dunnage supplier: _____			
Total Containers in System: _____			
Total Pallet Sets in System: _____			

Packaging requirements are detailed in Johnson Controls Global Supplier Standards Manual (Supply Chain management Expectations/Packaging Requirements). Please see www.icmanual.com. All suppliers are required to have an expendable packaging back up plan per Global Supplier Standards Manual.

PALLET INFORMATION		
Containers/layer: ***	Pallet Loads/Trailer Layer: _____	Return Ratio: _____ to 1
Layers of containers/pallet: ***	Pallet Loads High/Trailer: _____	
Total containers/pallet load: ***	Pallet Loads/Trailer: _____	
Overall unit load dimensions: *** LxWxD (in.)		
Pallet Model #: _____	lbs	
Pallet Type and Description: _____		
Lid Model #: _____	lbs	
Lid Type and Description: _____		

IDENTIFICATION (specify: hot stamp, stenciling, ID tag, other)	
Totes: _____ Location: _____ Verbage: _____ Additional label info: _____ Color: _____ Sequential #: _____ Label Holder: _____	Pallet boxes or pallets/lids: _____ Location: _____ Verbage, 1" tall letters: _____ Color: _____ Sequential #: _____ Label Holder: _____

DRAWING / PICTURE OF PARTS AND PACK

Component Supplier approval: _____	print	JCI Plant Materials/Quality approval: _____	print
	sign, date		sign, date
JCI Engineer approval: _____	print	JCI AME approval: _____	print
	sign, date		sign, date

Uncontrolled if printed

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System Size Sign Off

Supplier: _____
 Location: _____
 Part Description: _____
 Container Size: _____
 Standard Pack: _____
 Customer: _____
 Containers in system: _____

Days at JCI	_____	Containers at JCI	#DIV/0!
Days at Supplier	_____	Containers at Supplier	#DIV/0!
In transit to JCI	_____	Containers in transit to JCI	#DIV/0!
In transit to Supplier	_____	Containers in transit to Supplier	#DIV/0!
Total	0		#DIV/0!

APPROVAL (Signature and Date)

JCI Packaging Engineer _____

Supplier _____

JCI Plant _____

Piece Price Verification Form

**PKG Piece Price Amount
in PO** \$

**Actual PKG Cost Per
Piece** \$

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**PKG Maintenance Per
Piece**

Total Actual PKG Cost

***Amount to be
Credited/Debited***

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Expendable vs. Returnable Calculations

Expendable Costs	
Box Cost (ea)	\$5.00
Dunnage Cost (per box)	\$2.00
Tape Cost (per box)	\$0.30
Stretch Wrap/Banding Cost (per skid)	\$0.80
Pallet Cost	\$8.00
# Parts Per Box	25
# Boxes Per Skid	36
*Total Expendable Cost Per Pc	\$ 0.30

Returnable Costs	
Cost Per Container	\$5.00
Containers Required	300
Cost Per Dunnage	\$2.00
Dunnage Required	600
Cost Per Pallet/Lid Set	\$200.00
Pallets Required	50
Yearly Volume	200,000
Program Life (yrs)	5
*Total Returnable Cost Per Pc	\$ 0.01

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