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ENGINEERING **SPECIFICATION**
CONTROLLED BY APPLIED PRACTICES AND STANDARDS

Global Packaging Requirements

This cover sheet controls the revision status of this entire document.
All sheets of this document have the same revision number.

Revision History:

Rev	Date Revised	ECR/ECO	By Whom	Why / Sections Modified
0-23	Various	Various	Shervey, D	See MyWorkshop for details on previous revisions
24	2020 Jan 10	ECR2287934	Kleist, Jason	**Revisions / Additions** **4.1.6** Updated for clarity **4.1.9.1** Added section "General Distribution Environment" **11.2.2** The primary change is the testing GEHC performed to determine humidity/temperature monitoring, as well as the results that the information printed on the side of the boxes for temperature and humidity are not used as an indicator of temperature and humidity requirements during transport. **Deletions** **4.1.9.2 and 4.1.9.3**
25	2021 Nov 30	ECR2332505	Wendling, S Nevins, M Roman, J	**Revisions / Additions** **4.11** Added battery requirements to Time Sensitive Materials section **5.1.11** Added section "Registration & Reporting" **5.2** Updated Environmental Requirements **6.1.2** Added PKG COE **7.2.5** Reworded for clarity **8.1.4.3.2** Updated Korea recycle label requirement **9.1** Updated USA address for receipt of Service Parts **9.3.4** Added battery requirements to Shelf-life Material section **9.3.5** Added note regarding lead acid batteries to Special Requirements for Batteries section **Deletions** **4.12 3** Removed "Special Requirements for Solid Wood Crating" **5.1.3.1** Removed reference to ISBP 15, no longer required by China **5.1.8** Removed "China RoHS" Section **11.12** Removed "Protection Level Selection Matrix" Section ***** All subsequent Section Numbers changed

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1.0 General

1.1 Scope

This document defines the domestic and international packaging requirements for GE Healthcare (GEHC) products. These requirements apply to GE Manufacturing and Supplier finished good parts for Healthcare Systems (HCS), and Surgery products. They also apply to Service part shipments from GE Manufacturing and Suppliers for all HCS.

The purpose of this document is to provide controlled, documented packaging requirements for worldwide distribution of GEHC products. The requirements specified in this document are **minimum** requirements. They may be exceeded to comply with specific country or local regulations or requirements, but these minimum requirements are mandatory.

This document includes general and specific requirements, general reference information, and makes reference to other, more detailed specifications that are beyond the scope of this document. The goal is to provide global requirements to help ensure consistent, adequate, and economical product protection, and efficient and safe handling for all inbound and outbound GEHC products.

1.1.1 Use of Document

This document is to be used to define the requirements for the selection of different types and sub-types of packages and to help determine general protection requirements.

The user will start with the "Document Usage Roadmap" in Section 2 and "Package Type" definitions in Section 3. The roadmap will direct the user to the sections required for the type of material being shipped and the method of shipment.

All materials must comply with the requirements in Sections 4, 5, 6, 7, and 8. Service Parts must also comply with the Service specific requirements in Section 9. The requirements in the Exhibits and Addendum Sections 10 and 12 apply as directed from the other sections. The information provided in the General Reference Section 11 is for reference only.

1.2 Supplier Responsibility

GE Healthcare relies on the knowledge and expertise of its suppliers and their packaging/handling agents to ensure items are packaged safely and in compliance with all applicable laws and regulations. These requirements provide a basic understanding of GEHC packaging requirements, but the ultimate responsibility for safe and compliant packaging, validation testing, and all associated costs rests with the supplier. For questions on these requirements, the supplier or the supplier's agent should contact their GEHC Sourcing Leader or a GEHC Packaging Engineer to discuss their concerns.

1.3 List of Symbols, Abbreviations, Definitions, Acronyms

See Appendix A

1.4 Order of Precedence

The following order of precedence shall be followed:

1. The drawing, purchase specification, or other part or assembly specific document
2. This document
3. Other GEHC Standards referenced
4. Industry Standards referenced

GEHC or Industry Standards not referenced may apply

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2.0 Document Usage Roadmap

2.1 Determine the type of packaging required and the applicable sections in this document.

Step #1 - Define the Type of part:

It will be either a **Manufacturing Part** or a **Service Part**

Step #2 - Define the Sub-type of part (applies to **Manufacturing Parts** only):

A Manufacturing Part, will either be a **Line Use Part** or a **Finished Good Part**

Step #3 - Use the part type and sub-type to determine the quantity per package and the number of trips per package from the following table and the descriptions in Section 3.

Intended Use		Quantity Per Package		Trips Per Package	
Part Type	**Part Sub-type**	**Individual**	**Multiple**	**Single**	**Multiple (Reusable/Returnable)**
Manufacturing	**Line Use**	Optional	Preferred	Optional	Preferred
	Finished Good	Required		Required	
Service	**All**	Required			Required

Step #4 - Determine the applicable sections in this document from the following table:

Part Type	Part Sub-type	These Sections Apply For All Shipments By Sub-type	Add For Service Only:	Add As Directed By Other Sections	For Reference Only
Manufacturing	**Line Use**	**Section 3 –** Package Type **Section 4 -** Requirements **Section 5 -** Regulatory & Environmental **Section 6 –** Test & Validate **Section 7 –** Material Handling **Section 8 –** ID, Mark & Label		**Section 10** - Exhibits **Section 12** – Addendum A GE Market Place Parts **Section 13** – Addendum B Non-GE Market Place Parts	**Section 11** - General Reference **Appendix A** – Symbols, Abbreviations, Definitions, Acronyms **Appendix B** – Example/Reference Documents
	Finished Goods				
Service	**All**		**Section 9-** Special Requirements for Service Parts		

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3.0 Package Type

3.1 Selection of Package Type

Parts shall be packaged as specified in the GEHC Purchase Order, the Purchase Contract, the Purchase Specification, or GEHC Drawing. When Sourcing or Engineering documents do not explicitly define packaging requirements, select a package type which protects the product as required by Section 4 of this document, and is suitable for the product type as described in Sections 3.2, 3.3, and 3.4.

When suppliers cannot determine the product type from the purchasing or engineering documents, they should contact their GEHC Sourcing Leader for instructions. See General Reference #12, *"Protection Level Selection Matrix"* for additional guidance in the selection of specific packages for different modes of transport and shipping conditions.

3.2 Package Type for Manufacturing "Line Use Parts"

Ship "line use parts" in "reusable/returnable containers" whenever possible

Use "reusable/returnable containers" whenever the cost of the containers and the return transportation is justified. GEHC Sourcing Leaders will provide guidance to select or design containers and assure return to the supplier.

"Multi-pack" "line use parts" whenever possible to minimize packaging material cost and waste.

Do not use "individual packages" for "line use parts" except when the size, weight, or fragility of the part does not allow "multi-pack."

Use GEHC "milk run" carriers when possible to reduce the cost of delivering parts and returning packaging materials.

3.3 Package Type for Manufacturing "Finished Good Parts"

Unless otherwise specified, always ship "finished good parts" in "individual pack, single trip containers" so that parts do not need repackaging before shipment to customer sites.

When specified, ship "finished good parts" in "individual pack, double trip containers" so that the damaged or defective parts being replaced can be returned in the same package without additional damage.

"Finished good parts" will often be reshipped individually. Supplier packaging must provide adequate protection from the rough handling anticipated during express or courier shipments.

3.4 Package Type for "Service Parts"

See Section 9 for specific packaging requirements related to the Service Part package type.

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4.0 General Packaging Requirements

4.1 Basic Protection Requirements

4.1.1 Shock & Vibration

Provide adequate cushioning and dunnage materials to prevent damage from shock and vibration during shipment. The amount of protection required depends upon the fragility of the product and varies by the protective materials and mode of transport used. Cushion small products within their packages. Medium and large products can be protected with cushioned wood bases or special isolation systems built into the product itself. (See Section 6 for shock & vibration validation testing information, and General Reference #2, *"Distribution Environment Reference Data"* for general distribution environment shock & vibration reference data.)

4.1.2 Crushing Protection

Provide adequate compression strength with the package and/or product to prevent crushing during normal anticipated distribution and storage stacking and handling conditions. Some package crushing is acceptable as long as there is no product damage or loss of package integrity, but it should be minimized.

4.1.3 Scuff Protection

Use scuff resistant materials to protect all painted, plastic, and other finished product surfaces that come in contact with wood, untreated corrugated fiberboard, other products, or anything that could potentially damage the part surface.

4.1.4 Labels & Tape on Painted Product Surfaces

Do not apply temporary labels or tape to exposed product surfaces unless the adhesives used are specifically designed to not harm the surface, or have been tested and confirmed to release cleanly and not harm the surface. Consideration must be given to the length of time anticipated before removal due to adhesive hardening and bonding over time.

4.1.5 Static Protection

Protect all printed wiring assemblies and products with exposed electronic components from electrostatic discharge (ESD).

Package smaller, ESD sensitive parts in metalized, static shielding bags, and seal with a label identifying the contents as "ESD sensitive". Do not place any static generating material, such as instruction sheets, tape, or corrugated packing material inside of these bags.

If a part is repacked in a shielding bag after the seal is broken, the seal must be replaced.

Printed wiring assemblies with batteries must include an insulator to prevent accidental discharge of the battery.

Wrap and package larger products with exposed electronic components that are susceptible to static damage in antistatic materials. Use static shielding materials as required.

Printed wiring assemblies and printed wiring boards must not be packaged in "pink poly" or other plastic materials that use amines, or animal fats, as the static dissipating medium. These films or bags typically exhibit a slimy feel to the touch.

4.1.6 Moisture Protection

Moisture protection requirements apply when such conditions may be encountered during distribution. In a controlled system where rain, standing water, or similar extreme conditions are avoided (i.e., direct shipment

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from supplier to a manufacturing facility in a dedicated transport vehicle, small package shipping by express carrier, etc.), water resistant materials may not be required. The supplier must make this judgment based on knowledge of the distribution system being used. Additional information regarding moisture protection is found in Section 4.1.9.1.

4.1.6.1 Rain/Heavy Condensation

Cover products not contained in waterproof boxes or crates with a water resistant shroud to prevent water damage during distribution.

4.1.6.2 Humidity

Protect products sensitive to damage from high humidity with sealed enclosures and desiccant.

4.1.6.3 Standing Water

Package bases that may come in contact with standing water must not lose their compression strength when submerged in water for up to 48 hours.

4.1.6.4 Rapid Temperature Changes

Rapid temperature changes can occur when aircraft land after prolonged high altitude flight, or when products are moved from cold delivery vehicles to warm receiving docks. Heavy condensation can form on cold products when they come in contact with much warmer air. Protect products that will be damaged by short-term condensation with vapor barrier materials and desiccant to keep them dry. Products that will not be damaged by short-term condensation can be packed so that air circulates around the product allowing moisture to dry freely as the temperature changes.

4.1.7 Contamination & Cleanliness Protection

Cover larger products that ship on dollies or loose on wood skids with plastic bags or other acceptable coverings to keep them clean during distribution.

Bag or wrap smaller products that are susceptible to contamination to keep them clean and free from contaminates, including dust from cushioning and dunnage materials.

Do not use polystyrene cushioning materials if they can break and contaminate a product by releasing small foam pieces inside the package.

Sterile products must be packaged following all requirements listed in ISO 11607-1 and ISO 11607-2, or equivalent.

4.1.8 Corrosion Protection

Provide protection for products with exposed metal surfaces that are susceptible to corrosion. Typical methods of protection include:

4.1.8.1 Metal Coating & Finishes

In most cases, metal surfaces that are susceptible to corrosion should be finished, painted, or coated in some way to provide permanent protection.

4.1.8.2 Contact Preservatives

Temporary corrosion prevention/protection materials can be applied directly to metal surfaces. Removal of these preservatives may or may not be required. Provide specific instructions if removal is required.

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4.1.8.3 Part Surfaces in Contact with Wood

Part surfaces, either finished or unfinished, should not be in prolonged direct contact with wooden packaging. Moisture barrier materials must be used to isolate parts from all wooden packaging surfaces or components such as crates, blocking, or pallets. See Section 4.7, *"Lumber & Wood Packaging Materials"* for further information on moisture content limitations in wood packaging materials.

4.1.8.4 Humidity & Moisture Control

4.1.8.4.1 General

Package products susceptible to corrosion, in a manner, that will provide a dry, non-corrosive atmosphere around them during the expected time of shipment, and any storage. Vapor barrier materials from simple plastic bags and films to heavy foil laminated scrims must completely surround the product and be sealed to prevent moist air from coming in contact with the product. Desiccants must always be used with sealed systems to absorb moisture that is inside the vapor barrier material at time of packing and moisture that migrates through the barrier over time.

4.1.8.4.2 Barrier Materials & Desiccant

The type of vapor barrier material used, and the amount of desiccant required are dependent on the size of the package, expected relative humidity and length of exposure time.

4.1.8.4.2.1 Plastic Materials

Plastic materials provide an economical barrier for short-term protection. However, all plastic materials allow moisture to migrate through fairly quickly, which will result in a wet, corrosive atmosphere around the product if exposure time is too long. Time is critical when using plastic barrier materials.

4.1.8.4.2.2 Foil Laminated Barrier Materials

Foil laminated barrier materials are much more expensive than plastic materials but allow moisture to migrate through at a much slower rate, providing protection for much longer periods of time.

Foil laminated barrier materials should have a water vapor transmission rate (WVTR) of 0.02g/100in^2/24 Hrs. (0.31g/m^2/24 Hrs.) or less and it is recommended that the rate be 0.002g/100in^2/24 Hrs. (0.031g/m^2/24 Hrs.) or less. (Ref. MIL B 131 H)

4.1.8.4.2.3 Desiccant

Desiccant absorbs moisture and is placed inside the vapor barrier material but must not be in contact with the product. The quantity required can vary by type of desiccant (clay or silica gel) and by manufacturer, but the general formula is 1 unit (33g) for each 90 in^2 (580 cm^2) of exposed vapor barrier surface area. The quantity increases when wood, corrugated, and other materials that can contain moisture are packed inside the vapor barriers, so the quantity must be adjusted for specific applications. See Section 5.0 for regulatory and environmental limitations related to desiccants.

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4.1.8.4.2.4 Vapor Barrier Material and Desiccant Selection Table

The following table provides basic guidelines for barrier material and desiccant selection:

PROTECTION LEVEL (SEE 11.12.2)	DUST COVER OR VAPOR BARRIER MATERIAL	DESICCANT	TYPICAL PROTECTION TIME PERIOD	TYPICAL APPLICATIONS AND USAGES
TRUCK – 1, 2, 3 AIR – 1, 2	UNSEALED PLASTIC DUST COVER	NONE	N/A	AIR & TRUCK SHIPMENT WITH NO STORAGE
TRUCK – 3 AIR – 3 OCEAN – 1, 2	PLASTIC BAG OR SHEET WITH SEAMS HEAT SEALED OR SEALED WITH TAPE	STANDARD QTY PER SUPPLIER INSTRUCTIONS	3 MONTHS	LIGHT DUTY OCEAN SHIPMENT OR SHORT TERM STORAGE
TRUCK – 3 AIR – 3 OCEAN – 3	FOIL LAMINATED BARRIER MATERIAL WITH HEAT SEALED SEAMS	STANDARD QTY PER SUPPLIER INSTRUCTIONS	12 MONTHS MINIMUM	STANDARD OCEAN SHIPMENT OR LONG TERM STORAGE

1 = PROTECTION LEVEL 1 2 = PROTECTION LEVEL 2 3 = PROTECTION LEVEL 3

4.1.8.4.3 Dust Cover

A dust cover is a simple plastic bag or sheet draped over a product to help keep it clean. It is not designed to prevent corrosion. This type of cover must be kept open to allow air to circulate around the product, or condensation will occur and promote corrosion.

4.1.8.4.4 Tape Sealed Joints

Tape can be used to seal barrier joints to provide economical, short-term moisture protection.

4.1.8.4.5 Heat Sealed Joints

Heat sealed joints are more expensive than tape joints, but they provide greater protection from moisture migration and shall be used for longer-term protection.

4.1.8.4.6 Vacuum Pack

When barrier materials are heat sealed, it is most effective to vacuum excess air from inside of the barrier to provide the driest atmosphere possible at time of packing. Desiccant is always required when a vacuum pack is used to absorb moisture that already exists inside the pack, and moisture that migrates through the barrier material over time.

4.1.8.4.7 Wood Inside of Barrier

Do not seal green, un-dried wood, or any wood materials with a moisture content over 19% (26% for hardwood), inside of a vacuum pack or any other type of air tight cover. The acidic nature of wood moisture will cause severe corrosion.

4.1.8.4.8 Vapor Corrosion Inhibitors (VCI)

Parts or entire products can be protected from corrosion by controlling the atmosphere around the item and filling it with vapor corrosion inhibitors. The VCI material is available in paper, plastic film, foam pads, emitters, and many other delivery systems. It vaporizes around a product, condenses on bare metal surfaces, and prevents corrosion.

WARNING: Because VCI materials condense on all, bare metal product surfaces, they must be tested to insure no negative effects on the electronics or any other sensitive components of the product.

The type and amount of VCI material to be used is dependent on the type of metal to be protected and the style and cubic dimension of the package being used. Follow the manufacturer's recommendations when selecting a VCI material, and the required quantity for a specific application.

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4.1.9 Temperature Protection

4.1.9.1 General Distribution Environment

Normal environmental extremes anticipated during distribution are -40°C (-40°F) to +70°C (158°F), relative humidity of 10% and 95% (general cargo). When engineering identifies items which are susceptible to damage in this range (requires tighter limits), special handling must be defined, and special carrier handling arrangements must be made.
Design Controls and Risk Management (i.e., CMT (cause mitigation table)) will indicate when temperature and/or humidity requirements are more specific (tighter) than those stated in Thermal Test Guideline. When temperature/humidity conditions are fully tested per the Thermal Test Guideline 2252595PRE and no tighter limits or additional engineering specifications have been defined, then product can be distributed in the same range and considered general cargo.

Information regarding environmental limits and legacy equipment can be found in Appendix 11.2.2.

4.1.10 Loss of Small Parts, Papers & Packages

Consolidate very small parts with other parts and packing materials to prevent loss and/or misplacement. See Sections 10.1.12 & 10.1.13. Use a package that is larger than normally required if necessary, to prevent loss.
Place loose papers, e-License, and other documents in an envelope, pouch, or other containment as necessary, to prevent loss.

4.2 Package Arrangement for Sub-assemblies

Whenever possible, package accessories and all items necessary for the assembly of a sub-assembly, together in the same package, or in the case of many small packages, in the same large over-pack.

4.3 Standardization, Size, & Consistency

Minimize the number of different box sizes and other packaging materials used.

Consistently package products in the same container, for every shipment, to help in pre-planning, and to avoid confusion on the receiving end.

Select packages that allow adequate space for cushioning and dunnage material, but minimize unnecessary space, so that the overall package size is as small and compact as possible.

4.4 Reusable Containers & Materials

(Applies to Manufacturing Finished Good Part Shipments)

Use reusable containers and packing materials when mutually acceptable between shipper and receiver.

Design containers and packing materials to allow the receiver to easily remove the original product without causing damage or loss of integrity to the package.

Reusable containers are usually more expensive than disposable containers, so they should not be shipped directly to a customer site unless a return system is in place.

Always identify the country of origin on reusable containers for customs purposes.

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4.5 Reused Containers

(Applies to Manufacturing Finished Good Part Shipments Only)

Reused containers must provide the necessary protection for the product and meet all legal and regulatory requirements/compliance.

Remove or totally obliterate all old labels and markings that do not specifically apply when a container is reused.

Never package materials regulated as hazardous in a used container unless it is the exact, same product that the package was originally designed and certified for, and reuse is acceptable in the regulations.

The outer package of a combination package may be reused to ship a non-regulated material as long as all hazardous reference markings and labels have been removed or totally obliterated.

Reused containers must identify the country of origin for customs purposes.

4.6 Packaged Products Containing Liquids

Products and primary packages containing liquids should be sealed in moisture proof bags or liners to create a “Leak-tight” package that will prevent leakage in case of damage. This requirement does not apply to large machines or assemblies that include components containing liquids.

4.7 Lumber & Wood Packaging Materials

4.7.1 Conformance

All wood materials must conform to the minimum requirements and standards of their industry and must be in compliance with Global Wood Standard ISPM 15 per Section 5.1.3 of this document.

4.7.2 Water Content

The water content of lumber used in wooden pallets, crates, or product blocking, must not exceed 19% for softwood, or 26% for hardwood material 5 cm (2 inches) or less. The moisture content of all hardwood lumber and softwood lumber greater than 5 cm (2 inches) thick shall be 26% or less.

4.7.3 Bark & Plant Pests

All solid wood materials must be free from bark and free from live insects and insect larva.

4.7.4 Defects

Lumber used shall be free from the following defects:

- Knots or knot clusters whose diameter exceeds 1/3 of the board width or knots existing at nail driving positions, or at both ends
- Knots or knot clusters in square timbers of which the diameter exceeds 1/3 of the width of the member and which penetrates to both surfaces
- Knotholes, borer holes, dead knots, loose knots, or the like of 1.2 cm (.5 in) or larger, in diameter
- Cracks, mold, decay, warping, or the like, that jeopardizes the integrity of the crate or box

4.7.5 Formaldehyde Limits for Processed Wood

See Section 5.1.3.2 in this document.

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4.8 Strapping

4.8.1 General

Use break-resistant strapping for crate and package reinforcement, carton closure, securement, unitizing, bundling, bracing, palletizing, and other applications. Use adequate corner protectors, cushioning, etc., as required to ensure package integrity and product protection.

The use of plastic or plastic cord strapping is preferred. Metal strapping has sharp corners and edges that can cause injury and can be difficult to dispose of at customer sites.

All air cargo over 68 kg (150 lbs.) must be strapped on all sides (i.e., in both directions). The strapping must be heavy-duty metal or break-resistant plastic strapping. This requirement applies to crates and skidded items.

4.8.2 Usage Suggestions for Metal & Plastic Strapping

4.8.2.1 Metal Strapping

Use metal strapping for the most demanding applications, including reinforcement of wood crates and boxes and whenever sharp edges or corners are involved. Metal strapping does not stretch when applied and can loosen over time if wood or other package materials shrink or if the package is crushed.

Galvanic contact, such as through wet paper or corrugated fiberboard, will cause corrosion in both ferrous, and non-ferrous metals. Metal strapping must never be allowed to make either direct or galvanic electrical contact with a metal part.

4.8.2.2 Plastic Strapping

Use plastic strapping for all applications inside of wood crates and boxes, and for reinforcing corrugated boxes and other applications not requiring metal strapping.

Select the type of plastic strapping that best meets the strength and other requirements of the application.

4.8.2.3 Woven Plastic Cord Strapping

Use woven plastic cord strapping for applications that require a softer, less sharp material, to prevent product damage or injury. This type of strapping is secured by tying or with a metal or plastic buckle. It is generally for lighter duty applications.

4.8.2.4 Proper Tensioning & Edge Protectors

Do not apply strapping tension directly on a product unless absolutely necessary. Strapping tension must never bear on any unsupported section of a product. Strapping tension must never bend or distort a product.

Use edge protectors to prevent strapping from cutting into and/or over-crushing a package corner when used on corrugated boxes or other packages where edge crushing can be a problem. Slight crushing is acceptable and desirable to prevent strap slippage, but excessive crushing will result in loose straps and possibly damaged products inside.

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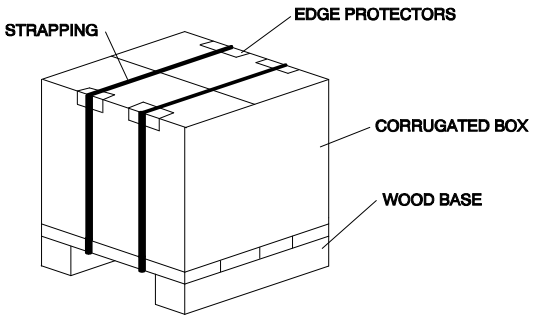
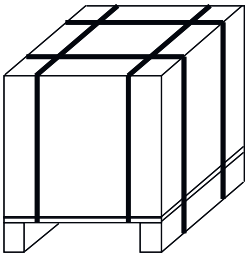
STRAPPING EXAMPLE FOR "NON-AIR SHIPMENT" OR "AIR SHIPMENT UNDER 68kg (150 lbs.)"

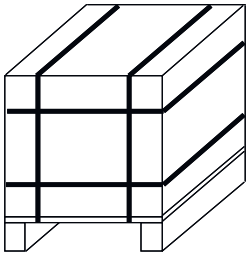


STRAPPING EXAMPLES FOR "AIR SHIPMENT OVER 68kg (150 lbs.)"

With Vertical Side Bands



With Horizontal Side Bands



Note: Vertical side bands that go under runners and are in contact with the ground can catch and break and can be hit and cut by fork truck forks and other handling equipment. In these cases, using Horizontal side bands is the preferred option.

4.9 Loose-fill Cushioning Material

Do not use loose-fill materials (i.e., "peanuts," "popcorn," etc.) or similar loose cushioning and/or dunnage materials in any package shipping to a GEHC facility or any direct shipment to a GEHC customer unless securely sealed in a bag or pouch.

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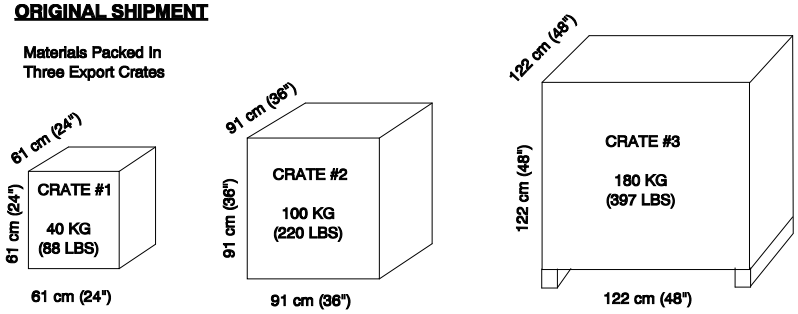
4.10 Package Weight-to-Cube Ratio

Condense products as much as possible in packages and crates to provide a high weight-to-cube ratio. Do not exceed carrier load limits but keep all packages and crates as dense as practical.
Transportation costs are typically determined by weight, but many carriers add additional charges when the weight-to-cube ratio falls below contracted levels. The following example illustrates how increasing the weight-to-cube ratio (i.e., density) can reduce transportation costs:

ORIGINAL SHIPMENT

Materials Packed In Three Export Crates



							Dim Factor		lb./ kg		Dim Weight	Actual Weight
Crate #1	61cm	X	61cm	X	61cm	=	226,981 cm³	/ 7590	=		30kg	40kg
	24"	X	24"	X	24"	=	13,824 in³	/ 210	= 66 lb.	x .45 =	30kg	40kg
Crate #2	91cm	X	91cm	X	91cm	=	753,571 cm³	/ 7590	=		99kg	100kg
	36"	X	36"	X	36"	=	46,656 in³	/ 210	= 222 lb.	x .45 =	99kg	100kg
Crate #3	122cm	X	122cm	X	122cm	=	1,815,848 cm³	/ 7590	=		238kg	180kg
	48"	X	48"	X	48"	=	110,592 in³	/ 210	= 527 lb.	x .45 =	238kg	180kg
										Total	367kg	320kg

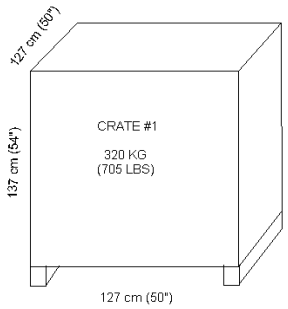
SUMMARY - The Total Dimension weight, 367kg, is 15% greater than the Total Actual weight, 320kg. Transportation costs are based on the higher of the two weights, so this shipment will cost 15% more than the actual weight cost.

Dimension Weight (Reduced By Improved Weight To-Cube Ratio)

Actual Weight (About the Same)

CONDENSED SHIPMENT

The Same Products Now More Densely Packaged & Combined in One Export Crate.



WtCube.DRW

							Dim Factor		lb./ kg		Dimension Weight	Actual Weight
Crate #1	127cm	X	127cm	X	137cm	=	2,209,673 cm³	/ 7590	=		290kg	320kg
	50"	X	50"	X	54"	=	135,000 in³	/ 210	= 643 lb.	x .45 =	290kg	320kg
										Total	290kg	320kg

SUMMARY - The Total Dimension weight, 290kg, is less than the Total Actual weight, 320kg. Transportation costs will now be based on the actual weight, saving the 15% premium from the original shipment.

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4.11 Time Sensitive Materials

Materials that are classified as having a shelf life must have a visible expiration date on the external packaging. The date format shall indicate expiration month and year. Recommended format is: “Expires MM/DD/YYYY” or “Expires MM/YYYY”.

Batteries shall have an install by date stated on the outside of the package. The install by date should be either documented in the engineering design outputs or PDM system, if not documented, it shall be no greater than 1 year for rechargeable batteries (secondary batteries). For non-rechargeable batteries (primary batteries) the install by date shall be no greater than 85% of the manufacturer suggested install by date. Example alkaline batteries have a 10-year shelf life so 8.5 years from the manufacture date shall be the install by date. Recommended format is: “Install by MM/DD/YYYY”, “Install by YYY/MM/DD” or “Install by MM/YYYY”. The format shall be written below the date.

Batteries that require recharging must have a visible recharge by date on the external packaging. The date format shall indicate recharge by date, month and year. Recommended format is: “Recharge before: MM/DD/YYYY” or “Recharge before: MM/YYYY”. If the battery has exceeded the recharge by/before date and not received the recommended recharge the battery is to be classified as defective.

4.12 Special Requirements for International Shipments of Manufacturing Finished Goods

International shipments require special protection from moisture and contamination and in general, require stronger outer packaging due to rougher handling and to support stacked loads.

Air shipments receive multiple handlings and packages will be stacked in containers or tightly secured to air pallets. **Ocean** shipments typically receive less handling but can be exposed to a very wet environment for a long period of time.

4.12.1 Special Requirements for International Air Shipment

Outer Package - The outer package should be wood or heavy corrugated fiberboard to prevent crushing and tearing. When corrugated fiberboard is used, it should be either triple wall or heavy double wall material.

4.12.2 Special Requirements for International Ocean Shipment

Outer Package - The outer package should normally be wood or plywood. Triple-wall corrugated can be used if it can maintain its strength in a wet environment.

Corrosion - Control the atmosphere around the product with desiccants and vapor barriers, VCI, or other protective materials to minimize the chance for corrosion. Keep the atmosphere within the package dry (40%RH or less) for the anticipated duration of the distribution cycle. Apply contact preservatives or other corrosion inhibitors directly to the product itself as necessary to provide adequate protection. See Section 4.1.8 for detailed information on corrosion protection.

Stacking - Add 1.3cm (1/2 inch) or thicker plywood between layers when products not crated or boxed in wood are stacked in ocean containers. Build a supporting deck between layers if necessary, to prevent crushing of the lower layers. **NOTE:** Corrugated boxes will lose 50% or more of their stacking strength in the humid conditions typically found in ocean containers.

Container Blocking & Bracing - Block and brace container loads as necessary to prevent movement during transport.

Checklist - See Exhibit 13, *“Packaging Checklist for Ocean Shipment”*

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4.12.3 Using Multiple Languages

The use of multiple languages is required for China and Korea and is recommended but not required for other countries. See Section 8 for specific requirements for China and Korea.

When specific requirements are not defined, it is suggested that multiple languages be used for standard identification type information (i.e., "Packing List Enclosed", "Check List Enclosed", "Technical Publications Enclosed", etc.), and information related to personal and product safety (i.e., "Warning: Top Heavy - Handle With Care", "Caution: Do Not Lift From This End Or Product Damage Will Occur", etc.).

It is recommended that the languages used include the first language of the country of destination, and those where carrier transfers or other special handling is expected to occur. A generic label with multiple languages typically includes: English, French, Japanese, Spanish, Italian, German, Chinese, Russian, and Arabic.

4.13 Packaging Optimization

Design packaging to optimize materials, handling, storage, transportation and delivery. See Exhibit 14 for *GE Healthcare Packaging Optimization "Golden Rules"*.

4.14 Condition of Outer Package

Containers used to ship products to a GEHC facility sometimes need to be reshipped to a GEHC customer with an outer package that is in like-new condition. When the PO or product specification defines the condition of the outer package, protection must be provided to ensure the outer package meets these specifications and receiving acceptance criteria when it arrives at the GEHC facility.

4.15 Packaging for Delivery & Installation

Packaging should be designed to support and minimize delivery and installation time and effort and minimize packaging material waste at the installation site. This applies mainly to larger systems that include multiple components that will be held on site and installed over a period of time.

4.15.1 Lean Packaging for Delivery & Installation

4.15.1.1 Advantages of Lean Packaging

Lean packaging utilizes visual management and logical arrangement to present components and finished products to the installation site in a manner that will minimize packaging material waste and reduce delivery and installation time. Advantages of Lean packaging include:

- Parts visible and easy to locate and identify
- Visual management to quickly identify missing parts
- Parts arranged to match the installation process and consistent with each delivery
- Simplifies the delivery process and movement of products at installation site
- Enclosed carts with doors can be locked to provide security during installation process
- Reduces scrap packaging materials at customer site
- Carts can be returned and reused
- Carts can be over-packed or blocked off their wheels for either air or ocean export shipment

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Typical Enclosed Installation Lean Cart

Typical Flat Installation Lean Cart

4.15.1.2 Lean Carts - Enclosed

Typical design considerations for enclosed Lean carts to insure safe and efficient transport and delivery include:

- Fit in standard elevators, 122cm (48”) wide x 280cm (110”) deep
- Fit through standard door openings 91cm (36”) wide x 203cm (80”) high

  Note: It is recommended the height not exceed 157cm (62”) to allow handlers to see over the top
- Capable of rolling over 2.5cm (1”) threshold without damage
- Capable of being pushed/pulled without mechanical assistance
- Capable of supporting a stacking load of 227kg (500 lbs.)
- Prevents parts from falling out of the cart during shipment
- Protects materials being shipped from damage under normal handling conditions
- Lockable access door(s)/panel(s) secured with easy open latches
- Provides clear visibility of parts when door(s)/panel(s) are opened
- Easy removal of parts without need for tools
- Capable of crane/overhead equipment lifting
- Capable of five times reuse minimum under normal handling conditions
- Labeled/marked to describe contents
- Labeled/marked with shipment & handling information (Do Not Drop, Do Not Tip, etc.) (As required)
- Must comply with ISPM 15 wood requirements

4.15.1.3 Lean Carts - Flat

Typical design considerations for flat Lean carts to insure safe and efficient transport and delivery include:

- Fit in standard elevators, 122cm (48”) wide x 280cm (110”) deep
- Fit through standard door openings 91cm (36”) wide x 203cm (80”) high

  Note: It is recommended the height not exceed 157cm (62”) to allow handlers to see over the top
- Capable of rolling over 2.5cm (1”) threshold without damage

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- Capable of being pushed/pulled without mechanical assistance
- Capable of supporting the weight of the products that will be shipped on the cart
- Prevents parts from falling off of the cart during shipment
- Capable of five times reuse minimum under normal handling conditions.
- Must comply with ISPM 15 wood requirements

4.15.1.4 Validation Testing of Lean Packaging

Validation tests shall be defined by the program/project team implementing the lean packing process. Typical tests include:

- Standard package validation testing defined in Section 6.1.2 of this document
- Trial shipments that simulate the anticipated shipping environment
- Technical justification from past experience or other criteria

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4.15.2 Smart Labeling for Delivery & Installation

Smart Labeling utilizes color coded or other special labeling on the outside of finished good packages to provide visual identification for how the package should be handled, or where it needs to be delivered at a customer site. The label can identify a specific room, location in a room, or provide other direction that will help direct it to the correct site location during delivery so the installer can quickly locate it during the installation process.

The following example shows colored labels used to identify the specific room packages need to be delivered to during a MR system delivery.

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5.0 Regulatory & Environmental Requirements

All packages and packaging materials used for GEHC products must be in full compliance with all legal and environmental regulations and requirements for all countries where these products are distributed.

5.1 Regulatory Requirements

5.1.1 Hazardous Material/Dangerous Goods

Package, mark, label, and document any material, product, and product outer package that is regulated as hazardous by the International Air Transport Association (IATA), or the International Civil Aviation Organization (ICAO) for air shipment, or by the International Maritime Organization (IMO) for ocean shipment, or any other regulatory body, to meet all of the regulatory requirements for the mode of transport being used.

When required by the regulations, packages for these materials must be tested and certified to meet the performance oriented packaging (POP) UN testing requirements. These special requirements can be found in the applicable documents referenced in General Reference #1, *"Package Design Specifications"*.

For radioactive materials, the packaging must meet the requirements set forth by the International Atomic Energy Agency (IAEA) and all applicable nuclear regulations.

5.1.2 Material Safety Data Sheet (MSDS)

When required, ship chemicals and materials which present potential health hazards with one copy of their MSDS in a pouch, on the outside of the package, and a second copy inside the package with the product. When shipping to a GEHC manufacturing facility for "Line Use", only one copy is required for the entire shipment.

Note: Many chemicals and materials not regulated under the transportation regulations defined in Section 5.1.1 do require MSDS documentation to communicate important safety information.

5.1.3 Wood Packaging Materials

SPECIAL REQUIREMENTS FOR COMPLIANCE WITH GLOBAL WOOD IMPORT REGULATIONS

Due to expanding global wood import regulations on unprocessed raw wood packaging materials, processed wood should be used for all wood packaging shipped to GEHC whenever possible.

When unprocessed raw wood packaging material is used in the construction of bases, pallets, boxes, crates, blocking, and all other packaging materials, it must meet the treatment and stamping requirements of the International Standards for Phytosanitary Measures, ISPM #15, issued by the International Plant Protection Convention (IPPC).

Plywood, particleboard, and corrugated fiberboard are examples of processed wood that are not included in this requirement.

The figure below provides a typical example of an ISPM #15 certification mark where the "XX" stands for the ISO two letter country code, "000" a unique number assigned by the National Plant Protection Organization (NPPO) to the producer of the wood packaging material, and "YY" the IPPC abbreviation for the approved treatment measure used.

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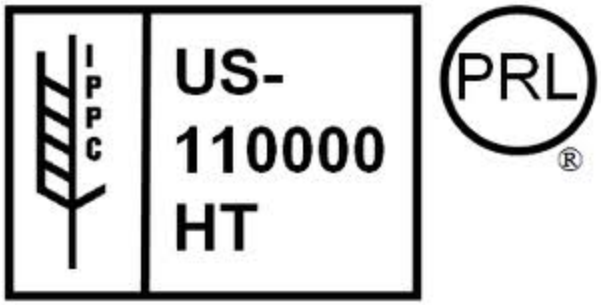

Typical ISPM # 15 Wood Packaging Certification Marking

This marking must be legible, clearly visible, permanent & not transferable, and must be on at least two opposite sides on the outside of all packages that include any unprocessed raw wood materials.

The use of red or orange color should be avoided.

For additional information, the following is the link to the IPPC Web site: https://www.ippc.int/

The following is a link to the ISPM # 15 document in multiple languages (Next to "Publication"): https://www.ippc.int/publications/regulation-wood-packaging-material-international-trade-0

NOTE: This section contains relevant links to an external website. The intent of this section is to guide the reader of this document to places where additional information can be found on the given topics discussed in this document. The above links and information located at these links are subject to change and are intended as reference only. The content of this document defines GEHC 2100268PRE, *"Global Packaging Requirements,"* not the attached links.

5.1.3.1 Wood Packaging Materials - CHINA Shipments

For shipments into China, all wood packaging materials (solid and processed wood) must be free from blue stain, worm holes, and any bark.

5.1.3.2 Formaldehyde Limits in Processed Wood Packaging Materials

Processed wood packaging materials (plywood, particle board, oriented strand board (OSB), etc.) shall have a formaldehyde level less than or equal to 1.5mg/L using the ASTM 5582 desiccator test or an equivalent test.

5.1.4 RoHS

Packaging materials are not included in RoHS, but have specified restrictions in 94/62/EC. Please see Section 5.1.10 of this document for specifics.

It is still best to avoid the following six RoHS restricted substances:

1. Lead
2. Mercury
3. Cadmium
4. Hexavalent chromium (Chromium VI or Cr6+)
5. Polybrominated biphenyls (PBB)
6. Polybrominated diphenyl ether (PBDE)

Note: PBB and PBDE are flame retardants used in some plastic materials

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5.1.5 REACH - EU Regulation (EC) No 1907 / 2006

Packaging materials are considered to be an "article" according to the EU REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) regulations. As a result, reporting may be required under specific circumstances when Substances of Very High Concern (SVHC) are included in the packaging materials.

All packaging materials used for GEHC products must comply with the latest revision of GEHC document 5396068GSP, "*GEHC REACH Requirements for Suppliers to GEHC Legal Entities*" and 5396068-2GSP, "*GEHC Supplier REACH Declaration Form: Substances of Concern & Substances of Concern in Articles*". See Section 11.13 for additional reference information.

5.1.5.1 The Following Steps will Help Insure Compliance:

Step 1: Identify packaging materials used for GEHC products
Step 2: Confirm that these materials meet the REACH definition of an "Article"
Step 3: Identify items that meet the requirement for "Intended Release"
Step 4: Ensure that all materials comply with the latest revision of GEHC document "5396068GSP, "*GEHC REACH Requirements for Suppliers to GEHC Legal Entities*" and 5396068-2GSP, "*GEHC Supplier REACH Declaration Form: Substances of Concern & Substances of Concern in Articles.*"

5.1.5.2 Compliance Statement

All suppliers must confirm compliance with the REACH requirements in the article management module in the GEHC REACH Tracker in GENSUITE. It is expected that suppliers will already be providing a compliance statement for the product being supplied, but the statement must also include the packaging materials shipping with the product.

5.1.6 UN Globally Harmonized System (GHS) and CLP Regulation (EC) No 1272 / 2008 on Classification, Labeling and Packaging of Substances and Mixtures

The EU's Classification, Labeling and Packaging (CLP) Regulation, (EC) No 1272/2008 presents the EU's implementation of the UN Globally Harmonized System (GHS) for the Classification of Chemicals. The goal of the GHS and the GHS regulations adopted by or to be adopted by various countries is to implement a global system of defining chemical hazards, classifying chemicals by their hazards, and communicating those hazards by a standardized system of labels, signal words, hazard pictograms, and Safety Data Sheets. US OSHA issued a final rule in March 2012, revising its Hazard Communication standard to align with the GHS and requiring GHS labeling of all chemicals by June 1, 2015. The EU now requires chemical substances to be labeled in accordance with CLP, and mixtures are required to have CLP compliant labels by June 1, 2015. Many countries have already adopted GHS regulations or are in the process of doing so. The specific regulation for the country to which the chemical is being shipped should be consulted to ensure compliance.

Labels meeting the requirements of GHS must be affixed to the immediate container of a hazardous chemical, substance or mixture or to the outside packaging. Labeling of packaging in accordance with GHS regulations must be compatible with labeling required by the rules on the transport of dangerous goods if the chemicals are to be shipped. For the EU, Article 33 of the CLP regulation provides specific rules for labeling of outer packaging, inner packaging, and single packaging to be compatible with both CLP and the rules relating to the transport of dangerous goods.

In addition, Article 35 of the CLP regulation provides general rules related to the structural integrity of packaging of hazardous chemicals. These requirements, as applicable to GE Healthcare's products, are satisfied by complying with the rules regulating the transport of hazardous materials\dangerous goods discussed in Section 5.1.1 of this document.

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5.1.7 Recycling Marks

Include international and country specific recycling marks and symbols on packaging materials. Recycling marks and symbols are only required on outer packages at this time, but it is recommended they be added to all packaging materials to meet future regulatory requirements.

When an over-pack is used, both the over-pack and the outer package(s) of the materials inside must include the required recycling symbol.

Corrugated fiberboard (cardboard) boxes and crates must be marked with either a Mobius Loop (preferred) or a China Specific symbol per the following examples:

Mobius Loop

China Specific Symbol

Marks must be applied as follows:

- Minimum of one mark per package
- Size to be 20mm, 40mm, 60mm or 80mm wide
- Easily visible
- The color green is recommended, but not mandatory
- These marks can be preprinted on the box or added with a permanent label

Wood crates and boxes do not require a recycling mark. However, all wood materials do require treatment certification markings as defined in Section 5.1.3.

Plastic outer packages require marks and material codes that will comply with China requirement GB 18455-2001. Examples include:

Material markings according to the Industry Standards ISO 1043 and ISO 11469 may be used if it is confirmed that they will comply with the standard GB 18455-2001. Examples of the ISO codes include:

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Metal outer packages require marks and material codes that will comply with China requirement GB 18455-2001. Examples include:

Other outer packages require marks and material codes that will comply with China requirement GB 18455-2001.

Green Point (Dot) Mark is a symbol that indicates the manufacturer has purchased a license for the right to use the symbol and has a process in place for recovering and recycling the material. Do not use this symbol unless all requirements have been satisfied.

5.1.8 European Community

If material markings are included on the packages, they must be in compliance with European Community Directive

- 97/129/EC – "*EC Identification System For Packaging Materials*"

5.1.9 European Community Packaging

Packages must be designed for compliance with EU Directive 94/62/EC per GEHC documents:

- DOC1141717, "*GE Healthcare Packaging Requirements Document for EU Directive 94/62/EC*"
- DOC1220258, "*GE Healthcare Functional Requirements for Compliance with EU Directive 94/62/EC and Amendments*"

94/62/EC Article 11 *"Concentration Levels of Heavy Metals Present in Packaging"*, states:

1. The sum of concentration levels of lead, cadmium, mercury and hexavalent chromium present in packaging or packaging components shall not exceed 100 ppm by weight.

2. The concentration level referred to in # 1 (above) shall not apply to packaging entirely made of lead crystal glass as defined in Directive 69/493/EEC (1).

3. All Exemptions to #1 (above) must be approved by the EU Commission including:
   - The conditions under which the above concentration level will not apply to recycled materials and to product loops which are in a closed and controlled chain,
   - The types of packaging which are exempted from the requirement referred to in # 1 (above).

The following Standards should be fulfilled:

- EN13427 - *Use of European Standards- Packaging*
- EN13428 - *Source Reduction*
- EN13429 - *Reuse*
- EN13430 - *Material Recycling*

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5.1.10 Dimethylfulmarate (DMF) – EU Directive 2009 / 251 / EC

All desiccant materials used to package GEHC products must contain less than 0.1 mg/kg of DMF.

DMF is an anti-fungal biocide that is used with some desiccant materials to prevent mold inside of packages. DMF has been banned for use with consumer products in the EU market. GEHC products are not included in the ban, but some countries are enforcing the ban on GEHC shipments, so compliance is required.

5.1.11 Registration and Reporting

A site that engages in packaging may have certain local or country specific obligations, including registration, reporting and recycling targets. Each location must identify and comply with their specific requirements.

5.1.11.1 South Korea

Promotion of Resource Conservation and Recycling Act [Act No. 16083], Article 9-3 requires the reporting of the material structure of all product packaging placed in the country on an annual basis. Based on the evaluation of the report by the Korea Environment Corporation (KEC), a label indicating "difficult to recycle" may be required to be placed on the packaging of the product.

5.1.11.1.1 Measuring the Amount and Type of Packaging

As packaging may vary product to product and site by site, sampling of (10) international shipments of a product is needed to gather the data required for submission to Korea Environment Corporation (KEC). The data for packaging material can then be averaged to set the estimate for packaging for the product for future shipments.

5.1.11.1.2 Reporting the Amount and Type of Packaging

The regional EHS team shall be responsible for submitting the report on an annual basis. Sales information can be used to identify which products were sold in the previous year and combine the list of products with the packaging information measured in the previous section to aggregate the report for Korea Environment Corporation (KEC).

5.1.11.1.3 Labeling

In the event that Korea Environment Corporation (KEC) determines the product packaging requires a "difficult to recycle" label, regional EHS will inform the specific product team of the requirement to produce a label to be applied to those products shipping to South Korea.

5.1.11.2 Singapore

The Resource Sustainability Act (RSA) and the Resource Sustainability (Prescribed Regulated Products) Regulations 2019 requires the reporting of the material structure of specific product packaging placed in the country on an annual basis, however, medical devices and components of medical devices are excluded from this reporting. The list of regulated consumer and regulated non-consumer products is given in the first and second schedules of the Resource Sustainability (Prescribed Regulated Products) Regulations 2019.

5.1.11.2.1 Measuring the Amount and Type of Packaging

As packaging may vary product to product and site by site, sampling of (10) international shipments of an in-cope product is needed to gather the data required for submission to National Environment Agent (NEA). The data for packaging material can then be averaged to set the estimate for packaging for the product for future shipments.

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5.1.11.2.2 Reporting the Amount and Type of Packaging

The regional EHS team shall be responsible for submitting the report on an annual basis. Sales information can be used to identify which non-medical device products were sold in the previous year and combine the list of products with the packaging information measured in the previous section to aggregate the report for National Environment Agent (NEA).

5.2 Environmental Requirements

These requirements are not only for GE Finished Goods Packaging, but also required of suppliers to GEHC (line use, finished goods, and FRU packaging).

5.2.1 Packaging Source Reduction

5.2.1.1 Design packages with the least amount of materials that will still provide adequate protection for the products contained.

5.2.1.2. Design packaging in the smallest size package possible while still protecting the product.

5.2.2 Packaging Material Selection

5.2.2.1 Design packages using materials that promote recyclability.

5.2.2.2 Do not use packaging made from Styrene polymers (PS, EPS, XPS) (i.e. Styrofoam) or PVC.

5.2.2.3 Do not use free flowing dunnage material (i.e. loose peanuts).

5.2.2.4 Use paper-based packaging materials whenever possible, such as corrugated fiberboard, molded pulp, paper filler, cellulose, etc. Use plastic sparingly.

5.2.2.5 Use packaging material with the highest amount of PCR (Post-consumer-recycled) content as possible.

5.2.3 Waste

5.2.3.1 When possible, packages should be designed using materials that minimize impact on the waste stream.

5.2.3.2 Design packaging so that components can be easily separated.

5.2.3.2.1 Avoid gluing foam to corrugate or wood if possible.

5.2.3.2.2 Include instructions on how to separate packaging materials if packaging is assembled with more than one material.

5.2.3.2.3 If using plastic, must be Comprised of a single resin, or a combination of resins (e.g., a blend) that are compatible for recycling, and separable by hand or with commonly available tools from other plastic parts that are not compatible together for recycling. ESD/anti-static plastic products and moisture-vapor barrier bags are exempt.

5.2.3.3 Use reusable packaging when appropriate (i.e., shipping from supplier to GE, less than 100 miles). Do not use reusable packaging when shipping to customers due to logistics cost.

5.2.4 Registration and Reporting

A site that engages in packaging may have certain local or country specific obligations, including registration, reporting and recycling targets. Each location must identify and comply with their specific requirements.

5.2.5 Recycling Marking and Identification

When using plastic, all plastic components must have recycling symbol clearly marked with material type in accordance with ISO 11469/1043.

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6.0 Package Testing & Validation

6.1 Package Validation Testing

6.1.1 Manufacturing "Line Use" Parts

The supplier is responsible for ensuring that the packaging used for these parts provides adequate protection to meet GEHC specifications and receiving acceptance criteria.

6.1.2 Manufacturing "Finished Good" Parts & "Service" Parts

Packaged parts should be capable of passing the GEHC shipping and handling tests defined in GEHC Document **46-316745**, "*Mechanical Environment Test Guideline"* and should comply with the environmental requirements defined in GE Document **2252595PRE**, "*Thermal Environment Test Guideline"* when this packaging Standard is specified on GEHC engineering documentation. The supplier is responsible for all testing and validation required to ensure their packaged part complies with the above requirements.

The use of trial shipments and/or engineering technical justifications in lieu of the test methods in 46-316745 and 2252595PRE shall be documented and approved by the responsible GEHC engineering product manager and in coordination with a member of the PKG COE.

NOTE: The GEHC Advanced Technology Center (ATC) is equipped to test and is available for consultation to help understand the requirements of 46-316745 and 2252595PRE. It is recommended that ATC be consulted for questions related to these two documents and before leveraging the use of trial shipments or engineering technical justifications in lieu of the testing requirements defined in them.

6.1.3 Package Validation Test Documentation

When package validation tests are required, the tests must be documented, and must include at a minimum:

- Test conditions (temperature & humidity)
- Test methods (vibration, drop, etc.)
- Test procedure (duration, frequency, orientation, height, etc.)
- Results (pass, fail, comments)
- Test equipment (model, serial number)
- Name of person who performed test and date performed
- Name of person who approved test and date approved

GE Document **DOC0359234** *"AME Lab Environmental Testing Template,"* provides a test report form that can be used to meet the minimum requirements. Suppliers may use their own report form as long as it includes the minimum required information. Supplier shall maintain test reports. They do not need to be submitted to GEHC unless requested.

6.1.4 Mechanical Testing

Mechanical testing consists of using mechanical devices to expose packaged parts to damaging forces similar to those expected in the distribution environment.
Typical tests include: Drop, Shock, Classical Shock, Random Vibration, Compression, and Horizontal Impact.
Collect as much information as possible on the part, packaging, and expected distribution environment before scheduling testing.

Basic information includes:

- Part specifications, including size, weight, and fragility level in all orientations

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- Any known weak points on the product, or damage history
- Packaged part specifications, including size and weight
- Information on how the part will be shipped (air, truck, ocean, etc.)
- Information on destinations part will be shipped to

Define "Product Failure." The test engineer must know exactly what is and what is not considered failure to successfully complete the testing.

Define "Package Failure." Define the acceptance criteria on the condition of the outer and inner packaging after testing. Typically, if the packaging is still capable of containing and protecting the product after testing it passes. If specific types of damage to the packaging are not acceptable, that must be included in the test plan.

Select tests and test levels to match the part, and any unique distribution requirements. This is typically a combined effort between requestor and test engineer.

When the testing is complete and successful, collect all test reports and any written correspondence related to the testing and the package design, and add this information to the project file. This information will then act as the validation for the package.

Parts that were physically tested must not be shipped to GEHC as new or repaired material unless they pass all original inspections and testing.

6.1.5 Trial Shipment Testing

A typical trial shipment validation test involves:

1. Shipper communicates information on the new or redesigned packaging to the receiver.
2. Receiver provides comments and general feedback to the shipper.
3. Shipper & receiver work together to select an Order and agree on timing of the shipment.
4. Shipper prepares the shipment and ships the new or redesigned package.
5. Shipper provides receiver with shipment information, including AWB No. (air shipment) or PRO No. (truck shipment) and estimated date of arrival.
6. Receiver inspects the shipment on arrival and may follow it through the delivery process, if necessary.
7. Receiver provides feedback in the form of written comments, photographs, video, or whatever is necessary to communicate any problems or concerns.
8. If no problems, the receiver gives shipper approval to implement the change on future shipments.
9. If there are problems, shipper makes necessary changes and initiates another trial shipment, or if the problems are very serious, the proposed new or redesigned packaging may be cancelled.
10. When the trial is complete, shipper collects all written correspondence on the trial,

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especially feedback from receiver and adds to the project file. This information will then act as the validation for the package.

6.1.6 Altered Supplier Package Validation

When a supplier's package is opened and changed by adding or removing a part or parts, the integrity of the original package design may be lost.

To validate an altered package, the package must either, be retested following the processes defined above, or the supplier must confirm in writing that the change will not affect the original validation and must provide rational and approval.

If there is any question as to the integrity of the altered package, it shall be retested.

6.1.7 Compression Testing

When the compression strength of the package requires validation to support stacking or other loads, and no other test standard has been defined, the compression testing protocol defined in Exhibit # 15, *"Compression Testing for GEHC Packaged Products,"* can be followed.

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7.0 Material Handling and Distribution Safety & Efficiency

7.1 Safety

The primary consideration for all GEHC products is for the safety of the products and the people handling them. All packaging must be designed to allow safe handling globally.

7.2 Handling

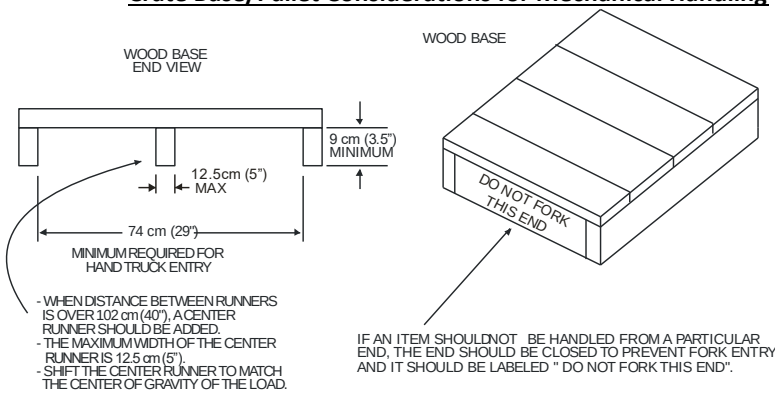
7.2.1 Crate/Package Base or Pallet

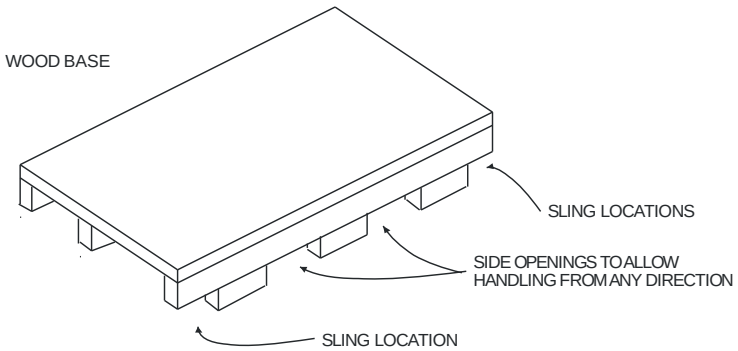
Finished good packages over 32 kg (70 lbs.) gross weight shall include a pallet or base that can be handled with standard manual and powered mechanical handling equipment available globally. The pallet or base can be made of wood, plastic, metal, corrugated fiberboard, Honeycomb paperboard or other material, as long as it passes validation testing and safely performs its intended function. The wood base or pallet examples provided in this document represent typical design requirements for all materials.

GEHC manufacturing and distribution facilities may have specific requirements for size and style of pallet for internal handling and racking. Each facility will communicate their specific requirements for inbound materials directly to the supplier.

The minimum height dimension under bases shall be 9 cm (3.5 inches), unless overall crate height takes priority. The minimum side-to-side opening shall be 74 cm (29 inches) when the size of the product and base allows. Reference diagrams below for typical handling considerations:

Crate Base/Pallet Considerations for Mechanical Handling





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7.2.2 Mechanical Handling for Products on Wheels

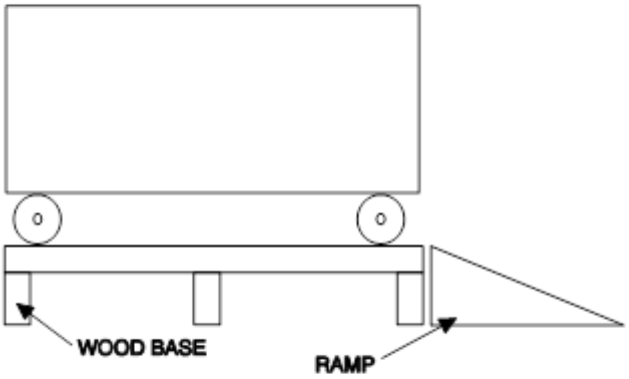
Products that ship on wheels must also allow forklift, or other mechanical type handling. Even products that move on their own wheels must still be lifted at some point during international distribution to be loaded onto an air pallet or to be loaded into a special container or transport vehicle that has a raised lip or edge that the wheels cannot roll over. When an item on wheels is shipped on top of a wood base or other type of blocking arrangement, consideration must also be given to providing a method for safely returning the item to the ground. All other standard considerations for safe handling covered in this guideline must also be followed. Reference the diagrams below for typical examples of methods of incorporating mechanical handling with items on wheels.

NOTE: Airlines will not accept products on casters that can roll. Caster wheels must be raised or secured on top of a stationary object so it is not possible to roll. See Examples #1, #2, & #3 below.

Mechanical Handling for Products On Wheels

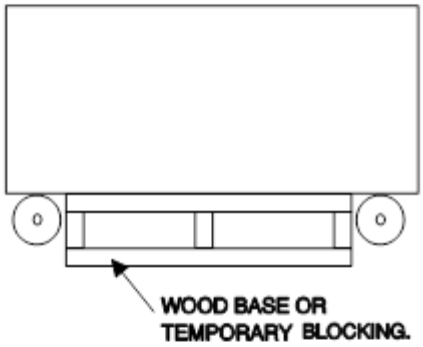
EXAMPLE #1

ITEM WITH WHEELS ON A FULL WOOD BASE WITH RAMP OR OTHER MEANS TO LOWER TO GROUND LEVEL.



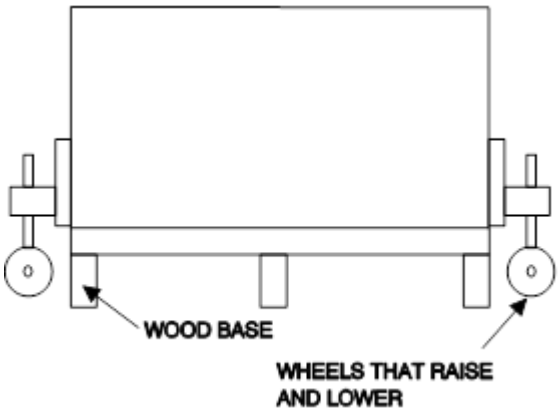
EXAMPLE #2

ITEM WITH WHEELS ON A PARTIAL WOOD BASE OR TEMPORARY BLOCKING THAT SUPPORTS THE PRODUCT WITH WHEELS SUSPENDED.



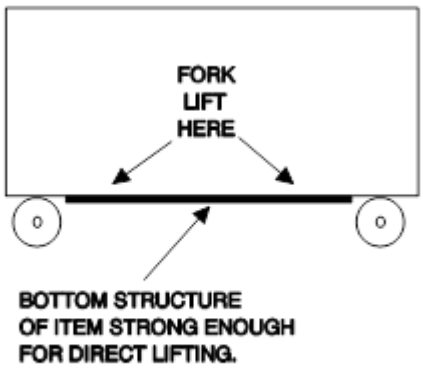
EXAMPLE #3

ITEM WITH WHEELS THAT RAISE AND LOWER, SUSPENDED OVER THE SIDES OF A PARTIAL WOOD BASE OR OTHER TEMPORARY BLOCKING.



EXAMPLE #4

ITEM WITH WHEELS WITH ENOUGH STRUCTURAL STRENGTH TO ALLOW DIRECT LIFTING.



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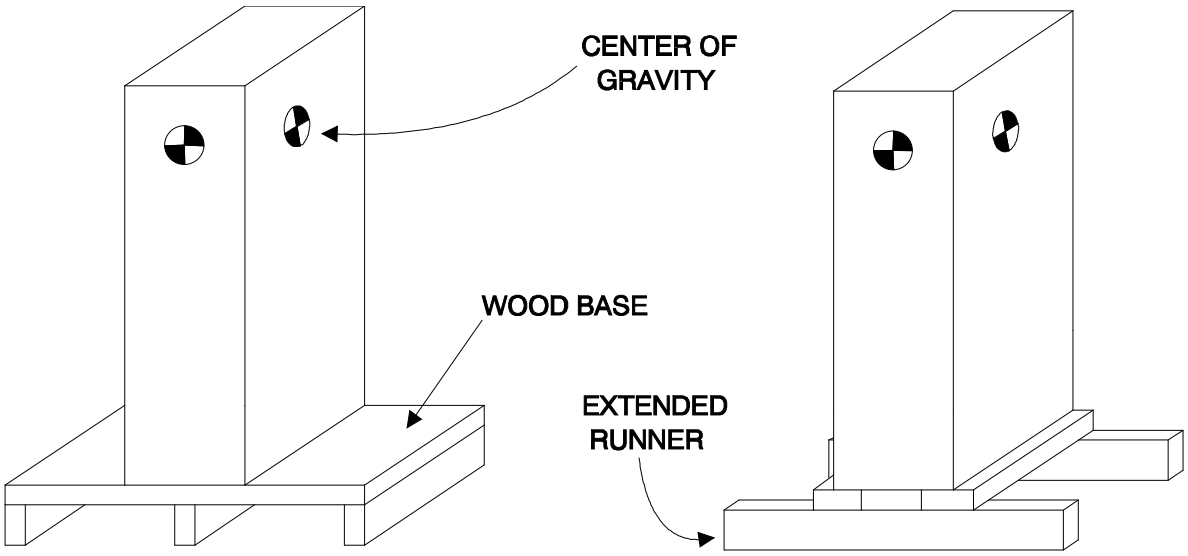
7.2.3 Stability

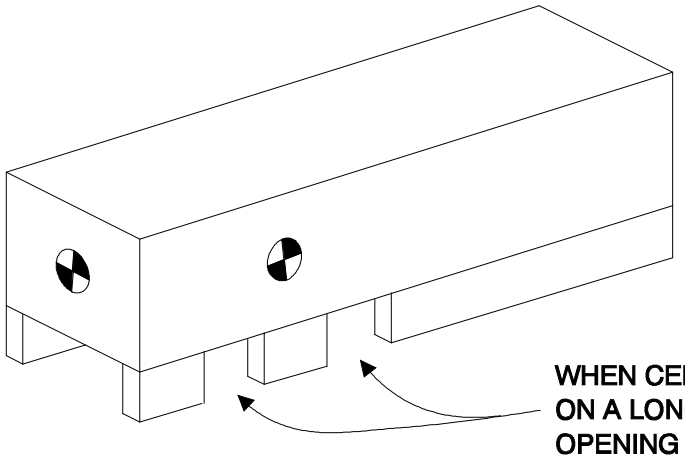
All crates and boxes that are tall, top heavy, or otherwise unstable, shall have wood bases designed to prevent accidental tipping during shipping and handling. Unstable is typically defined as an item 122 cm (48”) tall and greater, having a center of gravity higher than one half its standing height, or having a height of 2 times or greater of the shorter base dimensions. A standard test to determine stability is the **22-degree tip test**. (Tip the product 22 degrees from vertical and release. It should right itself without tipping over in either direction). The maximum tilt angle expected during distribution is 20 degrees. This can occur when a product is moved from a truck bed to the ground using a ramp. Reference diagrams below for typical examples of wood base designs that can be used to increase stability:

Crate Base for Stability



OVER SIZED WOOD BASES FOR TALL, TOP HEAVY ITEMS

WOOD BASE WITH EXTENDED RUNNERS INCREASES STABILITY AND ALLOWS NESTING DURING TRANSPORT FOR REDUCING CUBE.



WHEN CENTER OF GRAVITY IS OFF SET ON A LONG PACKAGE, THE SIDE FORK OPENING MUST ALSO BE OFF SET.

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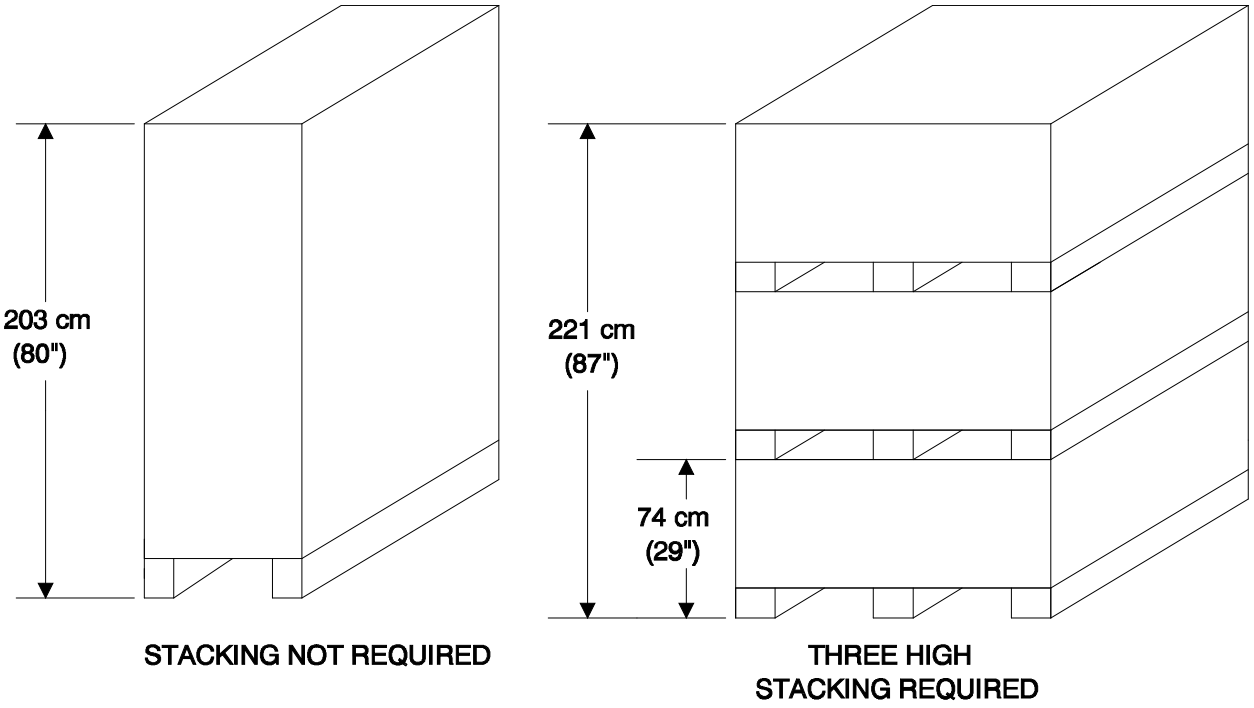
7.2.4 Stacking

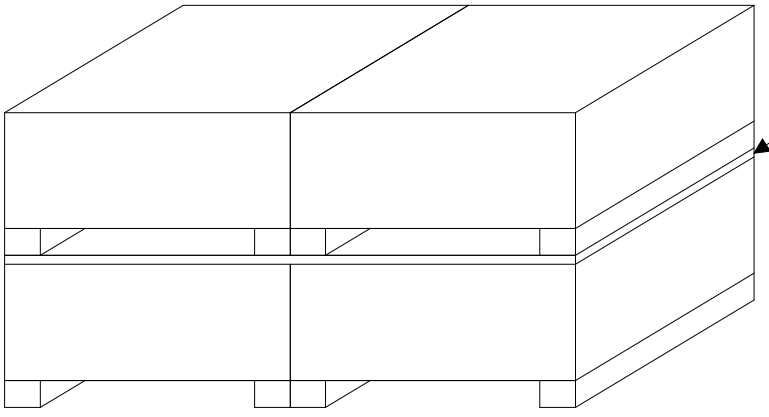
Most crates and packages shall be designed with sufficient strength to allow stacking of like items up to a height of 228 cm (90 inches). This rule does not apply to items that should not be stacked due to their weight, or the location of their center of gravity. These items, and others with limitations, shall be clearly marked "Do Not Stack", "Do Not Stack Over 2 High", "Do Not Top Load", "Very Heavy – Floor Load Only," etc. Reference diagrams below for typical examples:

Crate and Package Stacking



STACKING NOT REQUIRED

THREE HIGH
STACKING REQUIRED



PLYWOOD SHEET

TO INCREASE STACKING STRENGTH, ADD A SHEET OF PLYWOOD BETWEEN PRODUCT LAYERS.

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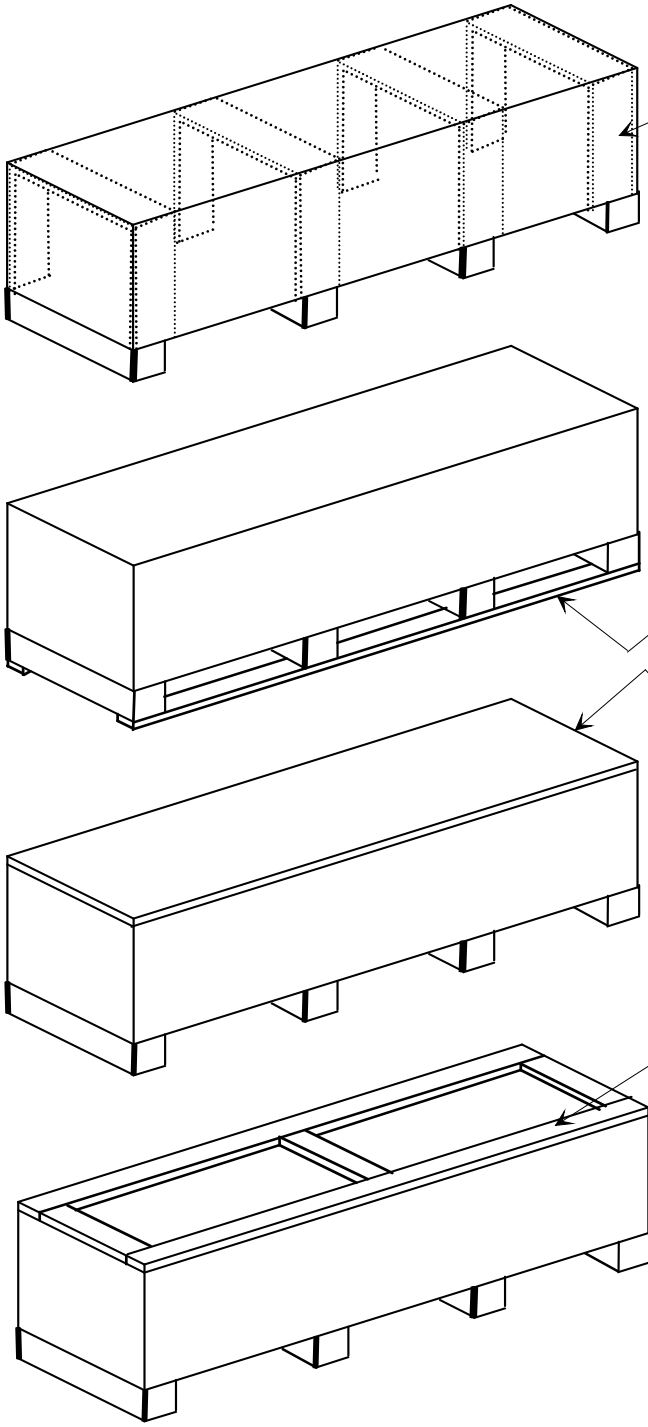
Triple-wall corrugated packages often require special considerations for stacking. The material itself is very strong, but it will crush and tear when a stacked load is exposed to shock and vibration. In many cases, internal blocking or load spreading reinforcement is required. Reference the figures below for typical reinforcement methods:

Increased Stacking Strength for Triple-wall Corrugated Packages



Add blocking inside of the box to increase stacking strength. Note: Blocking must be in line with runners.

Add wood rub strips under runners to spread the load on boxes stacked below.

Add a solid wood (Plywood) panel

OR

a wood frame

on top of boxes to spread the weight of items stacked on top and to prevent the runners of upper items from butting into the top of the box.

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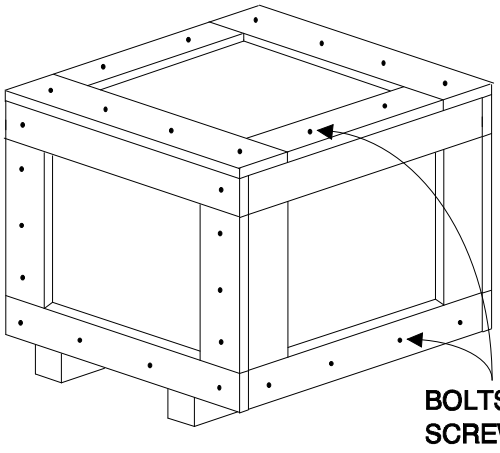
7.2.5 Package Opening & Product Removal

Easy opening and product removal shall be incorporated into the designs of wood crates and boxes to minimize uncrating time and the chance for product damage at the receiving pole and/or customer site. Bolts, clips, latches or screws should be used instead of nails and or staples to secure wood crates and boxes.

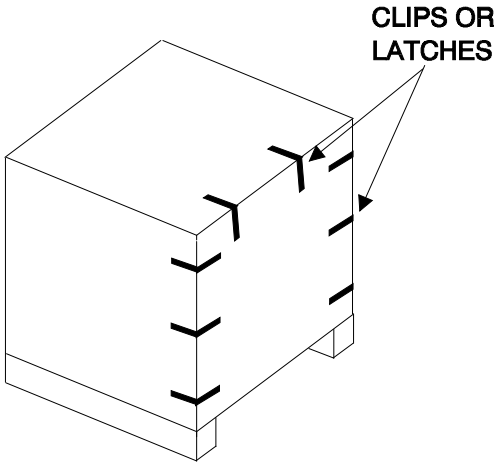
Provide a ramp for products on wheels to allow them to be safely rolled off their shipping base.

In all cases, if there is a specific method for safely opening a crate or removing a product, instructions shall be included on the outside of the crate to provide guidelines for the person doing the uncrating.

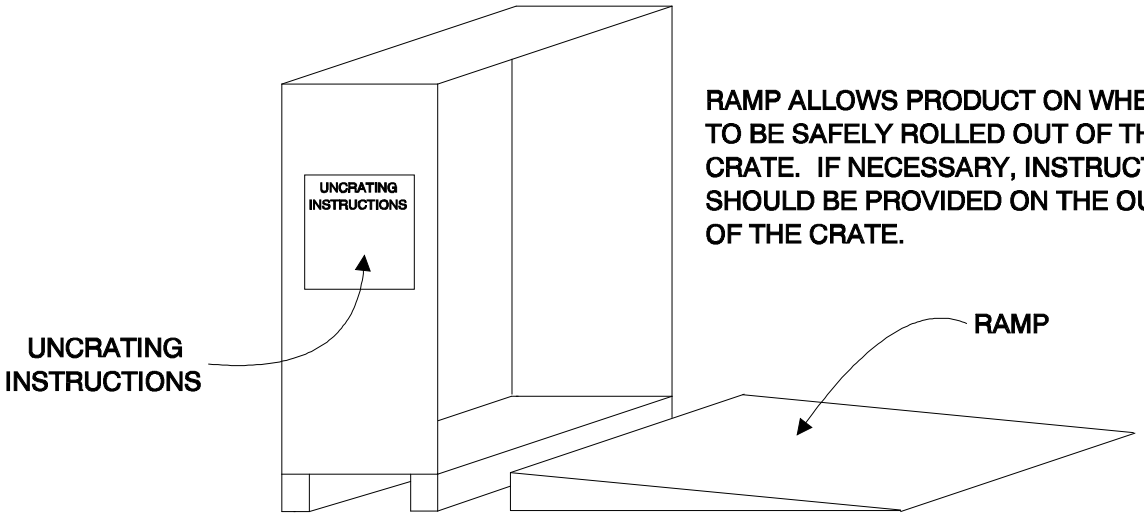
Package Designs For Easy Opening And Product Removal



BOLTED CRATE
ALLOWS EASY OPENING WITH ELECTRIC DRILL OR OTHER POWER TOOL . CRATE IS ALSO REUSABLE.



MECHANICAL CLIPS
CLIPS CAN BE MANUALLY OPENED, NO TOOLS ARE REQUIRED, CRATE IS REUSABLE.



RAMP ALLOWS PRODUCT ON WHEELS TO BE SAFELY ROLLED OUT OF THE CRATE. IF NECESSARY, INSTRUCTIONS SHOULD BE PROVIDED ON THE OUTSIDE OF THE CRATE.

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7.2.6 Reusable Packaging

7.2.6.1 General Package

Use reusable packages whenever there is a closed loop system between supplier and user, when the product being shipped will be removed from the package and repacked or when the package will be used to return an existing product from a customer site or a show. Reusable packages must be designed to easily open and re-close and be durable enough to withstand multiple distribution cycles.

7.2.6.2 Show Package

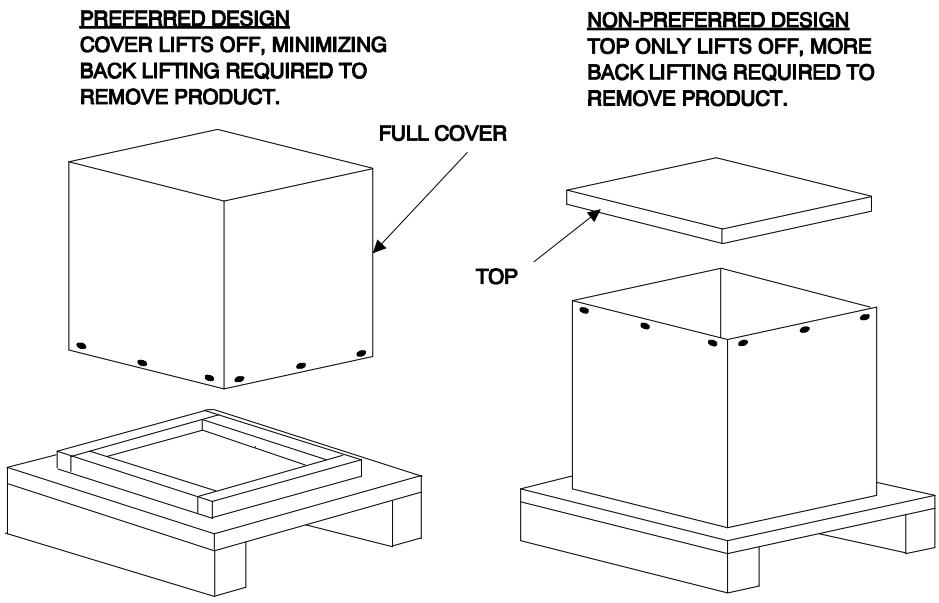
All packages used to ship products to a show must be reusable and must provide for easy opening and re-closing and easy product removal and repacking as described in Section 7.2.5.

All show packages must be closed with clips, clamps, screws, bolts or other fasteners that can be removed and reused without damaging the package. Do not use nails or other fasteners that are difficult to reuse.

7.2.7 Ergonomic Package Designs

Include ergonomic considerations in all packaging and handling practices. Design packages to minimize strain on people during product removal and repacking. Design items weighing over 16 kg (35 lbs.) to be handled by two people or with mechanical handling equipment (fork lift or hoist accessible). Design crates with a removable top and sides to reduce back strain from bending and lifting while removing the product. An example of a package that reduces back strain during product removal is shown below.

Ergonomic Package Design Examples



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7.2.8 Shipping Dolly Tool Requirements

Shipping dollies that require tools to raise, lower, or to make other adjustments during transport, must either include the required tool, or use a standard tool that is readily available globally.

- The standard tool used for many GEHC dollies is a ½ inch square socket drive.

7.2.9 Product & Package Height

Minimize total shipping height to allow efficient global transport. Reference "*Key Height Limits for Air Transport"* and other information in Section 10.10.2.2.1 as a guide.

7.2.10 Hand Holes in Shipping Containers

Hand holes can be added to shipping containers to allow more efficient manual handling. However, hand holes are not recommended because they allow access to small animals, birds, insects and other contamination.

When hand holes are used, the parts contained must be protected from contamination that could enter through the holes.

It is recommended that hand holes not be used with containers that will exceed 35 lbs. (16 kg). Hand holes encourage one person lifting and GE Healthcare EHS policy limits one person lifting to 35 lbs. (16 kg). Higher weights can also result in the hand holes tearing out on corrugated boxes, increasing the risk of product damage or personal injury.

Typical Corrugated Box with Hand Holes

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8.0 Product Identification, Marking, & Labeling

8.1 Manufacturing Parts

8.1.1 General Requirements for "Line Use" and "Finished Good" Parts

Identify parts contained in all packages with the following as a minimum:

- GEHC order number
- Part number or Catalog number with latest revision (i.e., PN 123456 Rev. 3) (as referenced on the order)
- Description
- Quantity on outer package(s) and inner package(s)
- Shelf Life Expiration Date if Applicable

Include any additional information required for reshipment or direct shipment to a GEHC customer or any special information as specified in the GEHC order.

Do not include the part name, description, or graphics on the outside of the package if it will encourage theft or any other security risk during distribution. (i.e. TVs, computers, monitors, cameras, etc.)

8.1.1.1 Packing List

Include a packing list that identifies the major components of the shipment and a cross-reference to the catalog number of the item that they are a part of. Reference the example provided in Section 10.4, "Exhibit 4" for specific details.

Attach the Packing List on the outside of one of the packages in an envelope or pouch labeled "Packing List Enclosed" or similar.

Attach the Packing List on a side of the package rather than the top if possible.

8.1.1.2 Product Locator Cards (PLC)

Product Locator Cards are required for serialized parts that require tracking. Reference GEHC Document 5215680GSP *"Supplier Product Locator Card Procedure"* for specific requirements.

8.1.2 Specific Requirements for "Line Use" Parts and GEHC Affiliate Shipments

8.1.2.1 Barcoded Receiving Label

For GE Marketplace (GXS) Suppliers – Attach ASN barcoded receiving label to each carton/package in the shipment per specifications outlined in **ADDENDUM "A."**
For Non-GE Marketplace (GXS) Suppliers – Attach barcoded receiving label to each carton/package in the shipment per specifications outlined in **ADDENDUM "B."**
For GEHC Affiliate Parts – All shipments between **Oracle Apps enabled** GEHC affiliates require the ISO Receiving Label. Attach barcoded ISO Receiving Label to each box in the shipment. Refer to ISO Receiving Label SOP for instructions on generating this label for your affiliate shipments.

8.1.2.2 Packing List for "Line Use Parts"

Each shipment to GEHC must include a minimum of (1) packing list including the following information (as a minimum):

- GEHC ship-to address
- GEHC modality (X-Ray, MR, US, etc.)

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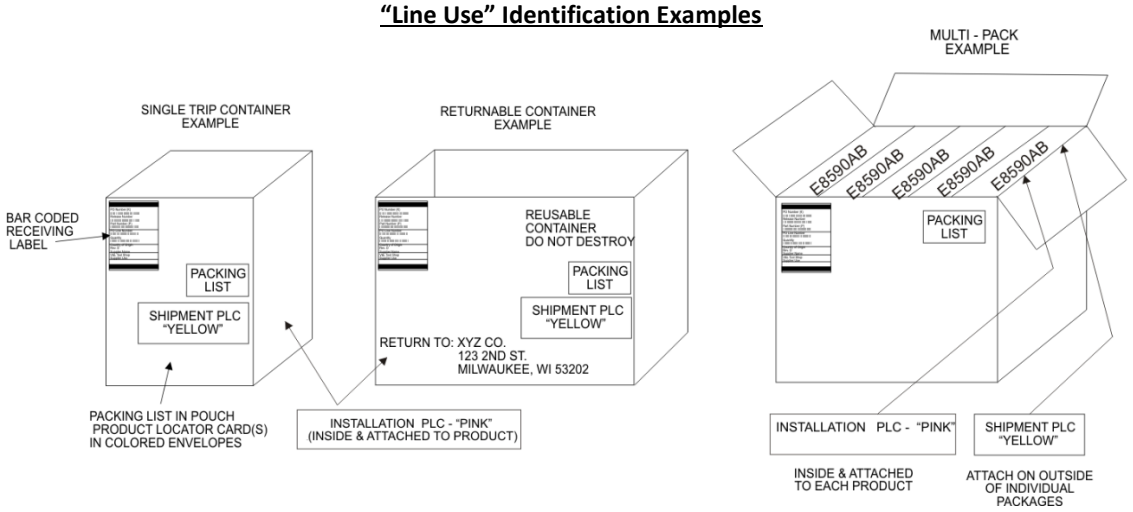
- GEHC PO+RELEASE number (13 digit number)
- GEHC part/catalog number, (as referenced in the GEHC PO)
- GEHC part/catalog description
- Quantity
- ASN# (GE Marketplace Requirements suppliers)
- Shelf Life Expiration Date if Applicable

Section 10.5 “Exhibit 5” provides a typical example of supplier packing list.

“Line Use” Identification Examples



8.1.3 Specific Requirements for “Finished Good” Parts

8.1.3.1 Multiple Packages

Clearly identify the outside of each package as “Box 1 of 4”, “Box 2 of 4”, etc., when more than one box or package is used to contain an item. Position the box number close to the product identification number to avoid confusion with other multiple package items and the case numbers used to identify an entire system.

8.1.3.2 Multi-pack

The outside of all multi-packs must clearly identify the number of pieces contained.

Do not mix part/catalog numbers. Each multi-pack must contain only similar items.

Each individual package contained in a multi-pack must be identified with the part/catalog number as a minimum and any additional information as specified in the order.

8.1.3.3 Checklist

Include a checklist in all packages containing loose parts that adequately identifies and states the quantity of each part contained. It is also highly recommended that a simple, graphic picture of each item be included. Reference Section 10.3 “Exhibit 3”, for a typical example.

8.1.3.4 Packing List for “Finished Good Parts”

Include a packing list that identifies the Order number and product identification information for all materials included with the shipment. Reference Section 10.5 “Exhibit #5”, for a typical example.

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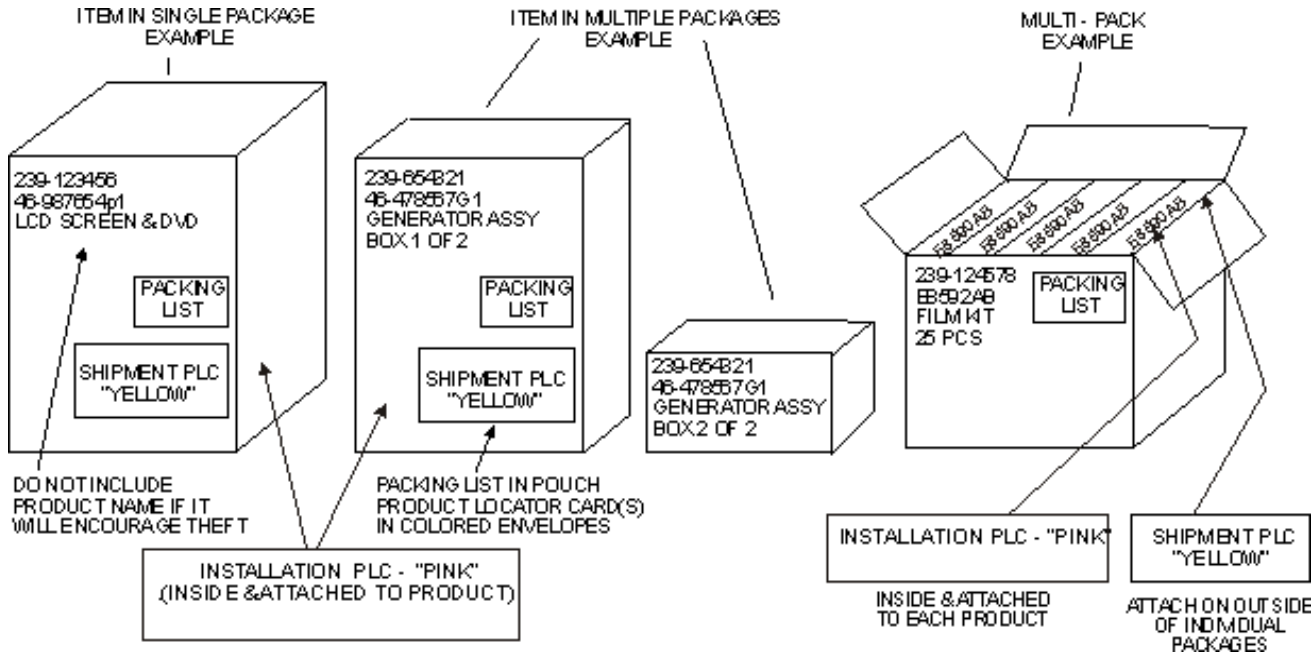
Clearly identify items shipped in multiple packages. Include a reference on the packing list for the Case/Box #(s) in which each item is packed.

"Finished Good" Identification Examples



8.1.3.5 Packing List for "System Shipments"

Include a packing list that identifies the components of the shipment and a cross-reference to the part/catalog number of the item that they are a part of. Include a reference to the Order number and/or customer order number, as specified in the purchase agreement. Reference Section 10.4, "Exhibit 4" for a typical packing list example.

Attach the Packing List to Case #1 of the system shipment.

8.1.4 Shipping Container Marking & Labeling

8.1.4.1 General Requirements

Include the general shipping information contained in the purchase order. This typically includes: shippers name and address, GEHC ship-to address, and any required precautionary information (i.e., fragile, handle with care, static sensitive, etc.). Avoid abbreviations as much as possible.

Information on the shipping container, product, and shipping documents must match. All information must match country specific licensing and registration.

When using overnight carrier services or other express delivery systems; the carrier labels should be applied to what is considered the top of the package. These carriers use automatic scanning systems that require their barcodes to be face up. Placing the labels on the top of the package will aid in keeping the package in the desirable upright orientation.

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All prior shipment and other non-required markings and labels shall be removed covered or otherwise obliterated.

When an over pack or consolidation pack is used, it is acceptable for the outer packaging to cover the markings and labels on the individual packages. Safe handling information (Fragile, This End Up, etc.) and other information critical to the safety of the shipment (i.e., temperature limits, “Do Not Freeze”, etc.) needs to be duplicated on the outer packaging. All regulatory and environmental marks and labels defined in Section 5 must also be included.

8.1.4.2 Special Requirements for Direct Shipments to GEHC Customer

Mark systems shipped directly to GEHC customers with the same information as those shipped to a GEHC facility, plus additional information that will be required by the customer. The special information will typically include the GEHC order number, customer PO number and the customer ship-to address. The buyer will provide this information in the purchase agreement or through special communications.

8.1.4.3 Special Labeling Requirements for System Shipments by Location

8.1.4.3.1 Special Labeling Requirements for System Shipments to China

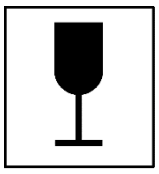
Packaging and/or containers carrying products or devices for sales and distribution in China shall be marked/labeled per the requirements in GEHC document DOC0062044, *China Labeling and Language Requirements and Procedure,* Section 5.2.6.

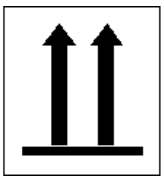
8.1.4.3.2 Special Labeling Requirements for System Shipments to **Korea**

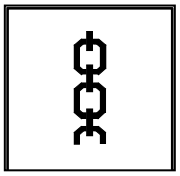
Full system shipments to Korea require specific information in Korean characters per GEHC document IQP12000/DOC0275476, *“Korea Labeling and Language Requirements Procedure”*. This requirement does not apply to accessories and suppliers that are not registered separately.

In the event that Korea Environment Corporation (KEC) determines packaging for a product is “difficult to recycle”, a label indicating "difficult to recycle" shall be placed on the packaging of the product.

Warning and handling information (i.e., “Fragile”, “This End Up”, “Sling Here”, etc.) on the outer package shall be International Standard markings:







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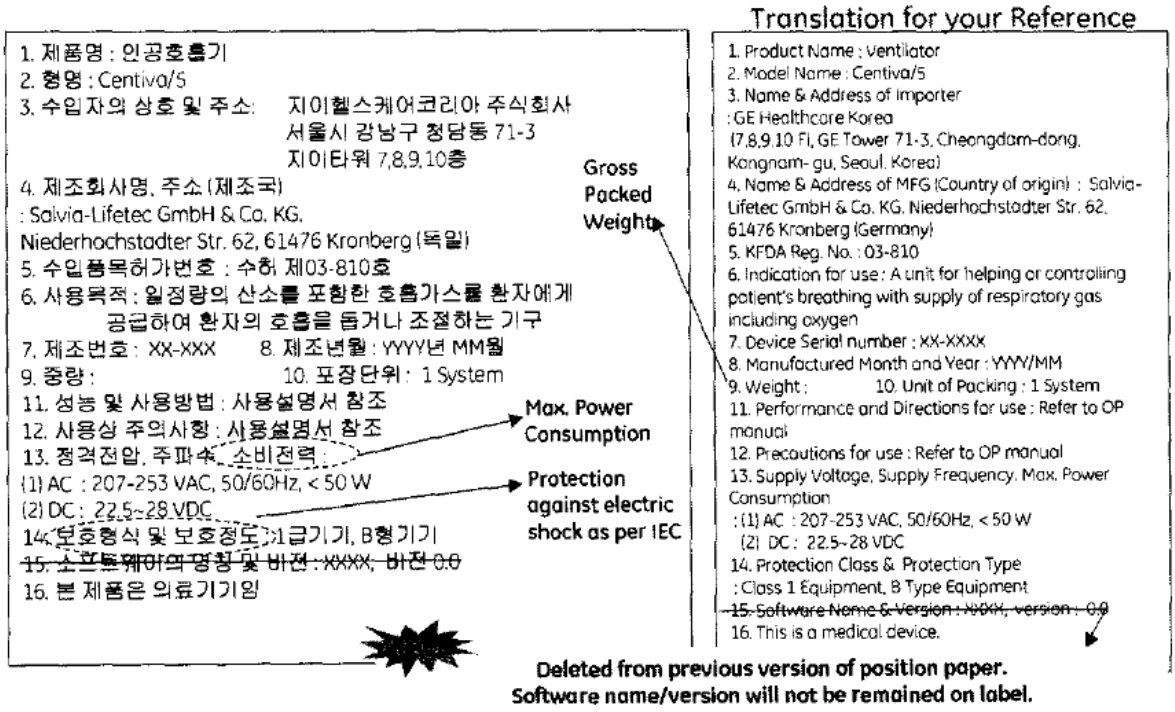
Product identification labels are required in a combination of English and Korean characters. The following is a typical example from IQP12000:

Packing Label.....Template



8.1.4.3.3 Special Labeling Requirements for System Shipments to **Venezuela**

Full system shipments to Venezuela require special labeling per the requirements of GEHC document DOC1060518, *"GEHC Venezuela Labeling Requirement"*. This requirement does not apply to upgrades, repair parts, Gold Seal, or any other shipments that are not part of a new system order.

When applicable, a minimum of one label is required on the outside of each final export shipping crate. Labels should be placed in the vicinity of other shipping labels but shall not cover any existing labels.

The following is a typical example of the required label:

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8.1.4.4 Intentionally Left Blank to Maintain Number Formatting

8.1.4.5 Marking

8.1.4.5.1 Method of Marking

Use labels, stencils, printing or tagging to mark the exterior of packages and shipping containers. Handwriting or lettering should be avoided.

8.1.4.5.2 Stenciling

Stencil by brushing, rolling, or spraying a sharply cut stencil with waterproof, black stencil ink.

8.1.4.6 Labels

Print, type or reproduce the required marking on labels.

8.1.4.7 Labeling

All labels must be securely affixed with water resistant, permanent adhesive.

Add staples or other mechanical fasteners as required when attaching to wood or other surfaces where adhesive alone may not permanently hold the label.

Print labels with permanent ink on a contrasting background. Avoid using inks in the red tones unless the ink is specifically designed to be fade resistant.

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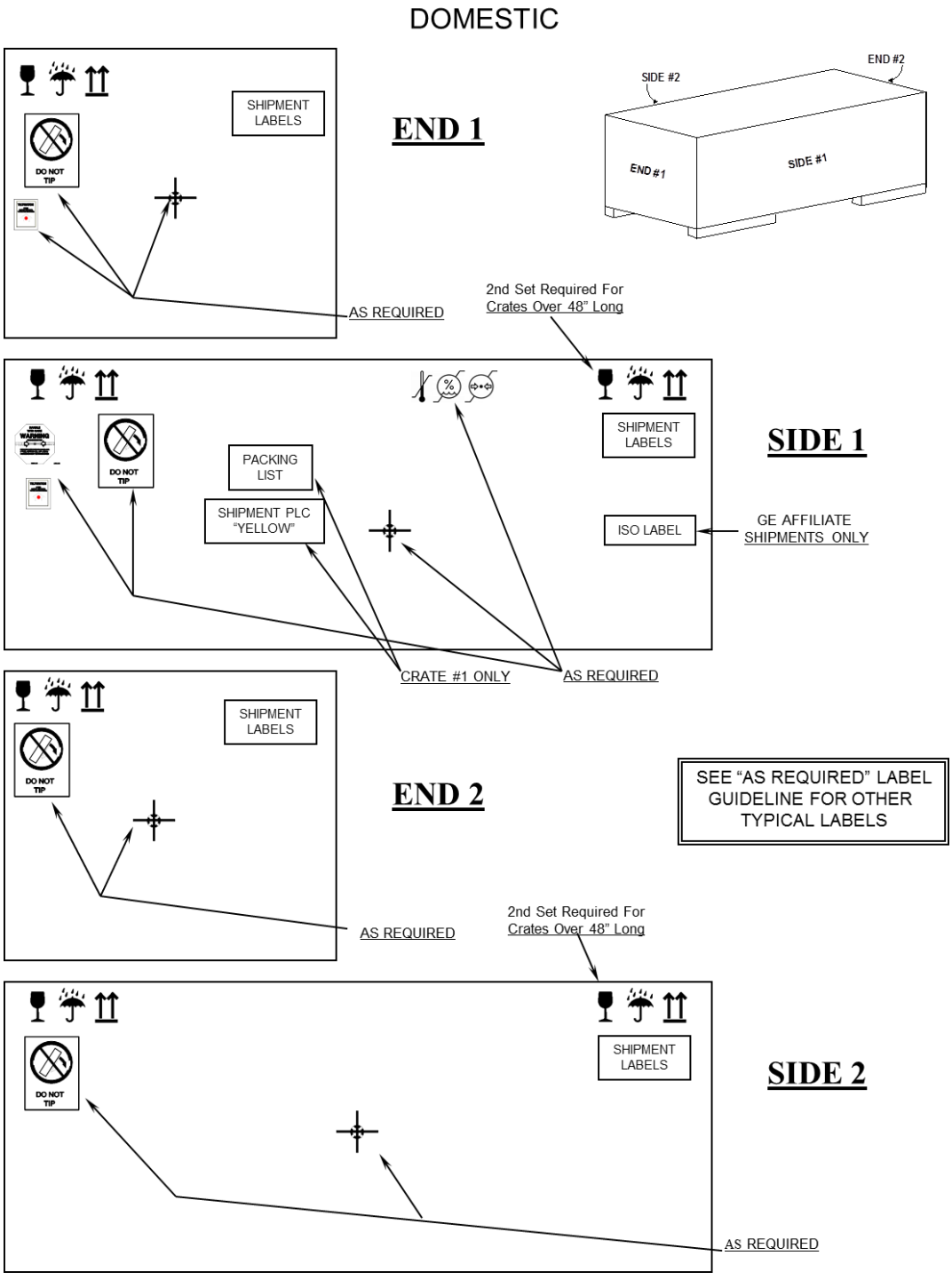
8.1.4.7.1 Domestic Shipment – Mark and label packages as closely as possible to the following layouts:

Some products may ship on a dolly or pallet and not include a shipping container. For these products, only the shipment labels and other shipment related information is required.



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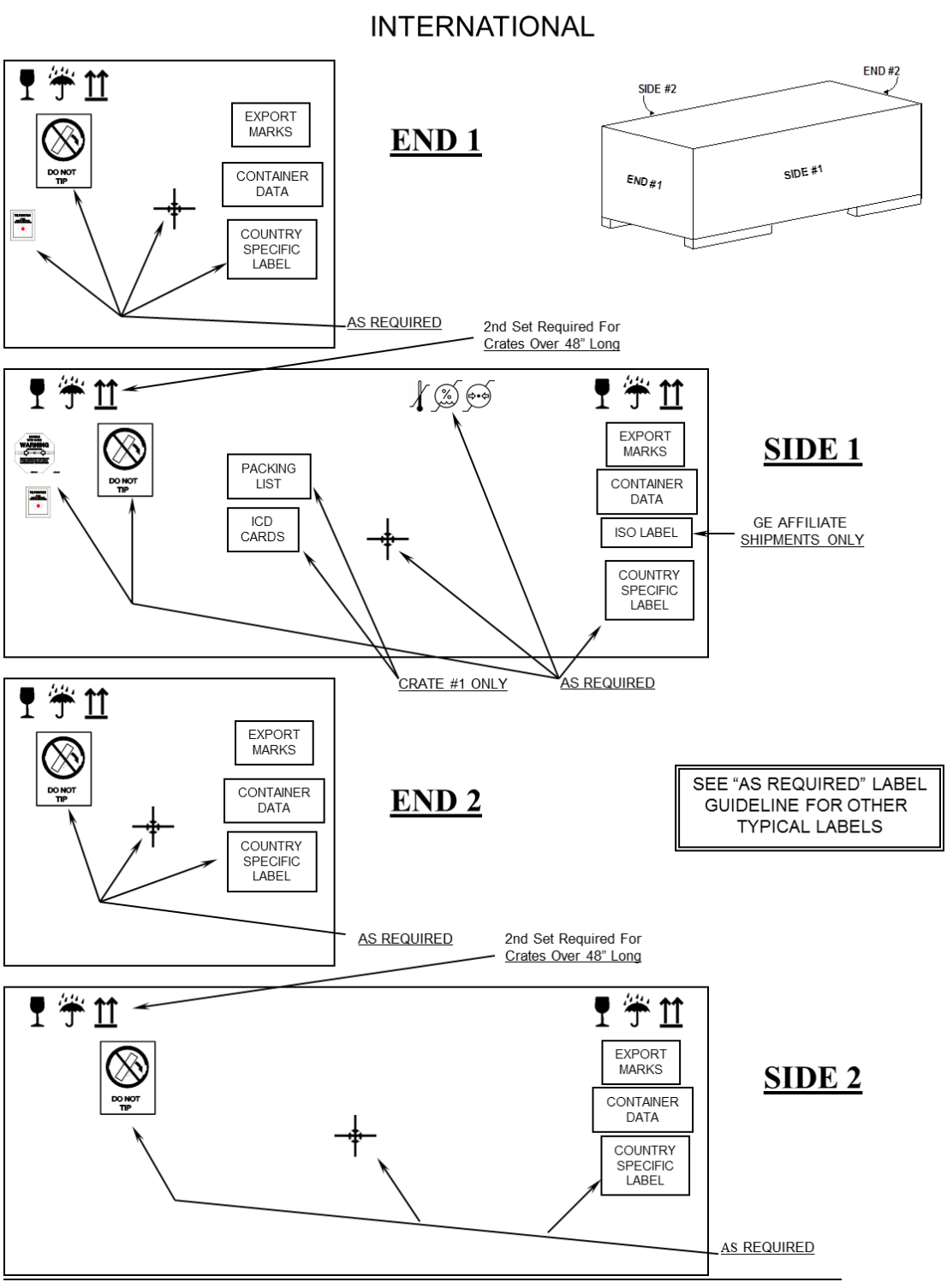
8.1.4.7.2 International Shipment

International Shipment Marking and Labeling Layout



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8.1.4.7.2.1 Standard Export Marks

The standard exterior marking requirements for international packed and containerized units shall include the following information:

From: Shippers Name & Address

Ship To: Consignee Name & Address

Shipment Info:
- Purchase Order Number:
- Order Number:
- Invoice Number:
- Manifest Number:
- Catalog Number:

Container Data:
- Item Number:
- Outside Dimensions:
- Net Weight:
- Gross Weight:

Made In: Country of Origin

8.1.4.7.2.2 Net Weight and Gross Weight

The net and gross weight values shall be followed by the unit of measure (pounds or kilos) in capital letters. All weights shall be rounded to the nearest whole number.

8.1.4.7.2.3 Outside Dimensions

Outside dimensions shall be shown on all shipping containers, having a cube of 493 cubic cm (30 cubic inches) or over, or having any single dimension of 183 cm (72 inches) or over. Outside dimensions shall be shown in the order of length, width, and height. Dimensions shall be rounded to the nearest cm/inch.

8.1.4.7.2.4 Location of Marking

It is assumed that the container will have two ends, two sides, a top and a bottom. Open crates and other irregular containers shall be marked to conform to this specification as closely as available space and shape of the container permit.

8.1.4.7.2.5 Container End Marking

When the container is .3 cubic meters (10 cubic feet) or under, the container data marking and destination address may be omitted from the end.

8.1.4.7.2.6 Marking and Labeling Layout

Mark and label packages as closely as possible to the following layouts:

8.2 All Parts (Including Service and Manufacturing)

8.2.1 Warning and Information Labels

When possible, use labels with international symbols per ISO 7000, following international labeling Standard ISO 780.

When a symbol is required that is not included in ISO 7000, it is acceptable to use a custom design symbol, as long as that symbol communicates a globally recognizable message.

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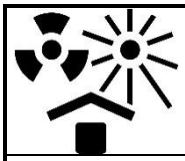
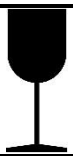
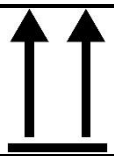
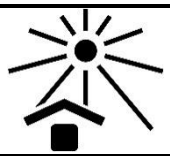
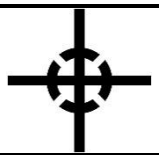
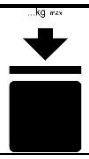
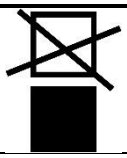
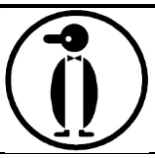
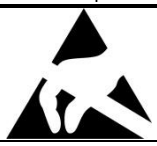
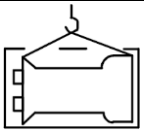
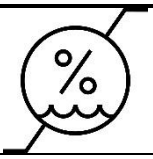
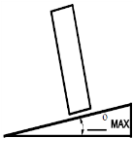
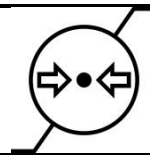
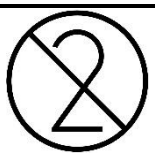
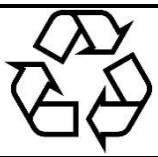
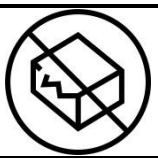
The following are typical examples of ISO 7000 symbols and commonly used custom design symbols:

International Warning and Information Symbols

 ISO 7000-0615: Protect from heat and radioactive sources	 ISO 7000-0621: Fragile; handle with care	 ISO 7000-0622: Use no hooks	 ISO 7000-0623: This way up	 ISO 7000-0624: Keep away from sunlight	 ISO 7000-0625: Sling here	 ISO 7000-0626: Keep away from rain
 ISO 7000-0627: Centre of gravity	 ISO 7000-2405: Do not roll	 ISO 7000-0629: No hand truck here	 ISO 7000-0630: Stacking limit by mass	 ISO 7000-0631: Clamp as indicated	 ISO 7000-0632: Temperature limit	 Perishable
 Handle with care	 ISO 7000-2402: Do not stack	 ISO 7000-0533 Upper Temp Limit	 ISO 7000-0534 Lower Temp Limit	 Do not freeze	 Keep frozen	 Keep away from cold
 ISO 7000-1065: Support at center	 Caution top heavy	 ISO 7000-2404: Do not clamp as indicated	 IEC 60417-5134: Electrostatic sensitive devices	 Do not drop	 Lift by inner fastening	 ISO 7000-2406: Use no forks
 ISO 7000-2620: Humidity limitation	 Keep away from magnets	 Do not step on	 Tilting limit	 Do not tip	 ISO 7000-2403: Stacking limit by number	 ISO 7000-2621: Atmospheric pressure limitation
 ISO 7000-0659: Biological risks	 ISO 7000-1051: Do not re-use	 ISO 7000-2608: Do not resterilize	 ISO 7000-1135: General symbol for recovery / recyclable	 ISO 7000-2401: Protect from radioactive sources	 ISO 7000-2606: Do not use if package is damaged	 ISO 7000-2609: Non-sterile

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8.2.1.1 Standard Hazard Warnings

Include the following common hazard warning symbols on the outside of all packages that contain fragile or sensitive products:

- **This End Up** - Use On All Crates That Include A Wood Base And Any Package That Should Not Be Tipped.

Note: The "This End Up" label should not be used on packages when tipping or orientation is not a concern, because it limits handling flexibility and can increase costs.

- **Do Not Get Wet** - Use On All Crates.

- **Fragile** - Use On All Crates.

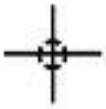
8.2.1.2 "As Required" Hazard Warnings

Include the following hazard warning symbols on the outside of package as required:

- **Tiltwatch** Label - Use On Outer Package Where Product Could Be Damaged By Tipping. Two Labels Per Package On Adjacent Side & End.

- **Do Not Tip** - Use On Outer Package Where Products Could Be Damaged By Tipping. See "Top Heavy & Do Not Tip Label Guidelines (Sec 10.8).

- **Caution Top Heavy** - Use On Outer Package That Meet The Definition Of Top Heavy. See "Top Heavy & Do Not Tip" Label Guidelines (Sec 10.8).



- **Center of Gravity** - Use On Outer Package When The Center Of Gravity Is Known And Is Important For Stability And/Or Safe Handling.

- **Do Not Freeze** - Use On Outer Package That Includes Product that would Be Damaged By Freezing.

- **Do Not Stack** - Use On Outer Package That Could Be Damaged If Other Crates Or Packages Are Stacked On Top.

- **Do Not Drop** - Use On Outer Package That Will Be Damaged If Dropped Under Normal Handling Conditions.

- **Do Not Fork This Side** - Use On The Sides And/Or Ends Of Packages When They Can Not Safely Be Lifted By A Fork Truck.

- **Sling Here** - Use On Package To Show Where It Is Safe To Lift The Package With A Chain Or Other Overhead Lifting Device.

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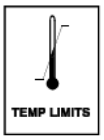
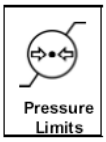


- **Temperature Limit** – Use On Outer Packages That Include Products With Defined Temperature Limits. Minimum One Per Package. Reference UL Standard UL60601-1

- **Humidity Limit** – Use On Outer Packages That Include Products With Defined Humidity Limits. Minimum One Per Package. Reference UL Standard UL60601-1



- **Pressure Limit** – Use On Outer Packages That Include Products With Defined Pressure Limits. Minimum One Per Package. Reference UL Standard UL60601-1

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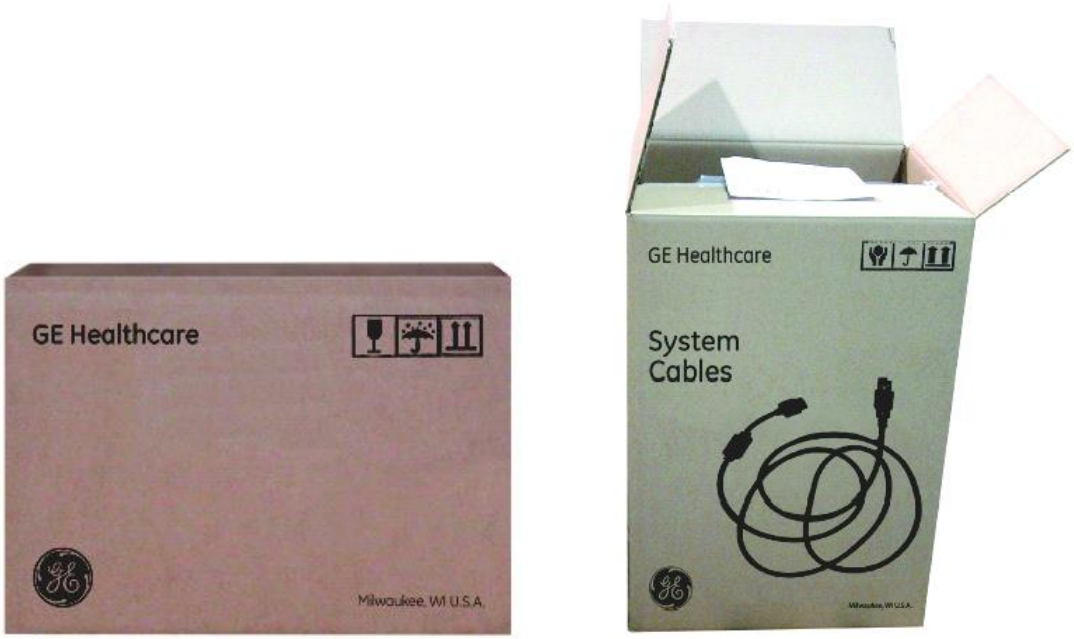
8.2.2 Use of GE Logo in Package Graphics

When the GE logo is used on packages, specific guidelines must be followed for placement and size of all logo graphics.

The use of the GE logo and GEHC branding graphics is recommended for manufacturing finished good parts but is not a requirement.

Specific layout instructions and artwork are available through GEHC on request. A typical package graphic layout with logo and monogram are shown below, and layout details are provided in Exhibit 11. See the GE Branding web site at https://www.gebrandcentral.com/ under "Information & Guidelines" for specific details.

Typical Package Graphic Layouts Using GE Logo & Monogram



Warning Labels

8.2.2.1 Passive Labels

Apply passive labels as required to provide necessary caution warnings and instructions. Specific examples include:

- All liquids shall have "Up-Arrows", "This Side UP" and "Contains Liquid" on the package
- Delicate items shall have "Fragile or Fragile Glass" warnings
- Tall or top-heavy items shall be identified with "Top Heavy" warnings
- Items subject to damage at low temperatures shall have "Do Not Freeze" warnings
- Static sensitive materials shall have "Anti-Static" warnings.
- Sterile materials shall be identified

Use international symbols (Reference Section 8.2.1) in addition to written words whenever possible.

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8.2.2.2 Active Labels

8.2.2.2.1 Tilt Indicator

Use Tilt indicator labels on all products that are susceptible to damage if tipped 90 degrees or more during shipment. This is in addition to the “DO NOT TIP” written warning or label on the package. Apply two labels per package, on two adjacent sides (i.e., one side and one end). Apply the labels in recessed areas of the package whenever possible, to avoid contact with other freight and transport equipment during distribution. Reference Section 10.9, Exhibit #9, for specific usage details.

8.2.3 Package Seal

When seals are used to secure a package, it is recommended that label type seals be used on all entry points of the package, similar to those specified for Service Part packages (see Section 9.5). When mechanical type seals are necessary, the wire or cable and the seal itself must not be made out of lead.

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9.0 Special Packaging Requirements for Service Parts

9.1 Overview

This procedure applies to all parts supplied to Service, both new and repaired parts, when no other specific document is associated with the parts. Some high value parts will have specialty packaging that will be defined by part number on the drawing or in the purchase specification. The specialty packaging requirements take precedence over the general requirements of this guideline.

*Certain parts can be excluded (bin bulk, <$20 dollars, etc.), except when indicated by GE.

Service part orders should be identified on the purchase order, but all shipments to the following addresses will be Service Parts and must follow the special packaging requirements in Section 9.

USA:

GE Healthcare, C/O CEVA U00

2727 East London-Groveport Rd.

Dock 66 – 67

Groveport, OH 43125

Singapore:

UPS House

22 Changi South Ave 2

Singapore 486064

Japan:

Prologis Parc Tokyo

2F, 2-1-2 Tokai Otaku

Tokyo, Japan 143-0001

France:

UPS Logistics

Group Parc d'Activities

de la Guepelle Bat C

St Witz, France 95470

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9.2 Scope

Most GE Healthcare Service parts will be reshipped individually using an overnight type express courier. This environment produces greater shock levels and compression loads than most other types of transportation, so compliance with the requirements of this document is critical. In addition, service parts require individual labeling and sealing in order to comply with the needs of the service parts logistics network. These requirements comprise a global standard used by all poles of GEHC Service Operations, for shipments to GEHC service parts stocking locations.

All requirements defined in this document (2100268PRE) apply, except requirements defined in Section 9 take precedence for Service Parts.

9.3 Packaging Requirements

9.3.1 Individual Packaging

All service parts exceeding $20 unit cost must be packaged in individual packaging enabling shipment directly to Customers. It is allowable to ship multiple packages in one, larger container to reduce shipping costs as outlined in Section 9.4. However, all parts shipped inside the larger container must be individually packaged as defined in this document.

9.3.2 Reusable/Returnable Containers

All individually packaged parts > $20 must be packaged in reusable/returnable containers.

Service Parts will be shipped individually between GEHC distribution facilities and customer sites and unpacked and repacked multiple times.

All packages must be capable of multiple shipments and multiple openings and closings. Packaging must provide adequate protection for the rough handling that is normal for express and courier type shipments.

9.3.3 Packaging Assemblies, Kits, & Multi-piece Items

When multiple pieces are required for a part or an assembly that is considered a single part, the entire assembly must be individually packaged in a SINGLE package so that no repacking is required at the GE Healthcare facility, and assemblies are not separated.

9.3.4 Shelf Life Material

Service parts that are classified by the OEM as having a shelf life must have a visible expiration date on the part's external packaging.

The date format shall indicate expiration month and year.

Recommended label format is: "Expires MM/DD/YYYY" or "Expires MM/YYYY".

Batteries shall have an install by date stated on the outside of the package. The install by date should be either documented in the engineering design outputs or PDM system, if not documented, it shall be no greater than 1 year for rechargeable batteries (secondary batteries). For non-rechargeable batteries (primary batteries) the install by date shall be no greater than 85% of the manufacturer suggested install by date. Example alkaline batteries have a 10-year shelf life so 8.5 years from the manufacture date shall be the install by date. Recommended format is: "Install by MM/DD/YYYY", "Install by YYY/MM/DD" or "Install by MM/YYYY". The format shall be written below the date.

Batteries that require recharging must have a visible recharge by date on the external packaging. The date format shall indicate recharge by date, month and year. Recommended format is: "Recharge before: MM/DD/YYYY" or "Recharge before: MM/YYYY". The recharge by date shall be interpreted as an install by date or expire date if not recharge by/before date.

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9.3.5 Special Requirements for Batteries

All batteries must be packaged to comply with the IATA regulations to allow reshipment by air whenever possible.

Batteries that are forbidden for air shipment must be plainly labeled “Forbidden for Air Shipment.”

Lithium batteries may be regulated as hazardous material and must be packaged in accordance with all applicable HMT regulations. They must always be packaged to ensure the leads cannot touch and short.

Due to recently implemented regulations with these lithium batteries, consulting with EHS prior to packaging and shipping is recommended.

Batteries shall be treated as a hazardous material and shall meet all government regulations unless otherwise stated as exempt.

Note: Lead Acid Batteries without liquid acid (AGM or non-spillable) may be labeled as “non-spillable” and have different requirements than that of Lead Acid with liquid acid, verify with local government regulations before shipping.

9.3.6 Palletized Shipments

Palletized shipments should be designed to be stackable. Express carriers such as FedEx will stack palletized loads, so they should be designed to support stacked loads.

9.3.7 Package Weight Identification and Handling Restrictions

All crates and packages over 16 kg (35 lbs.) are to be identified according to their weight range. Graphics shall be used to indicate the package weight range, as well as number of people required to manually lift it, and when a mechanical lift is required per the pictograms below. (Colored labels can be ordered with these graphics, refer to the information provided in Section 9.6.2 for Ordering Process)

Packages 16 – 32 kg (35 – 70 lbs.) - 2 FEs or Mechanical Lift (For labels, use black characters on yellow background)

Packages > 32 kg (70 lbs.) - Mechanical Lift (For labels, use black characters on red background)

Weight restriction – For units over 32 kg (70 lbs.), design packaging to be handled by mechanical handling equipment (hand truck, cart, fork lift or hoist)

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9.3.8 Corrugated Containers for Reuse

Corrugated containers must not be reused if they are ripped, damaged, have any signs of exposure to water, or prior exterior labels cannot be removed. They must be able to hold all inner pack in a proper manner, equivalent to a new container.

9.3.9 Hazardous, Liquid, and Chemical Materials

Hazardous, Liquid, and Chemical materials or items that contain the same shall be:

- Packaged at the individual level regardless of the cost of the part
- Packaged such that it can be shipped ground, air, or ocean in accordance to 49 CFR, IATA, IMDG, UPS, and FedEx regulations and policies. This includes packaging types, seals, and DOT marking and symbol requirements.
- Labeled on the outside of the shipping container with prohibited modes of transportation, for example: “Cannot ship by air”.
- Labeled “Must ship with hazmat” if item considered “hazardous” by UPS or FedEx
- Packaged with a MSDS for each chemical in the container, or that can potentially leak from the assembly.

Note: The Supplier is the original “Shipper of record” and must comply with the above to ship material to GEHC. The above requirement simply moves all these requirements to the individual packaging such that GEHC stocks a ready to ship package. As regulations change and apply differently to different materials GEHC cannot interpret regulations for each Supplier. Approved Suppliers are chosen based on their ability to meet these requirements.

9.3.10 Size of Package

Size of package shall be adapted to the size of the part, as small as possible, while maintaining adequate protection. Perform the drop tests defined in GEHC document 46-316745 when requested by GEHC to demonstrate packaging effectiveness.

9.3.11 Packages Protection

Packages shall provide basic protection from moisture, crushing, surface damage, corrosion, and other product specific needs as required. Perform the drop tests defined in GEHC document 46-316745 when requested by GEHC, to demonstrate packaging effectiveness.

9.3.12 Loose Fill Material

All loose fill material must be contained in a larger, enclosed bag to prevent small pieces from escaping when the box is opened and item is removed.

9.3.13 Repairable Parts

Repairable parts must be contained in packages, which facilitate their return to repair centers. The packaging must be replaced after each repair to obtain a clean package ready for the next shipment, except if the package is considered as a Reusable package (see Section 9.3.14).

9.3.14 Reusable Packaging

Reusable package may be used for expensive packaging materials. This can be achieved easily by using reusable materials for the main and expensive internal components with a low-cost, replaceable external case.

The external packaging must be replaced after each delivery to obtain a clean package ready for the next shipment.

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9.3.15 Protection from Static Electricity

All electronic boards and parts containing sensitive, accessible components must be protected from damage due to electrostatic discharge (ESD). ESD sensitive parts shall be wrapped in a conductive antistatic bag or film. The bag must be closed using a tamper-proof label.

9.3.16 Categories of Packaging

The following categories were created to give examples of the minimum necessary requirements. Components may still need specially designed packaging to be able to meet the testing standards.

9.3.16.1 Electronic Components (See Section 9.3.16.7 for specific information on packing circuit boards)

- Fragile 1 – ESD bag with ESD foam individually boxed. The component shall fit snug in the box with approximately 38mm (1 ½") space between part and edge of container.
- Fragile 2 – ESD bag with ESD bubble pack individually boxed, with approximately 1" of bubble wrap between product and edge of container.

9.3.16.2 Cables

Individually packaged in a bag with connectors bubble wrapped. The bags shall be labeled.

9.3.16.3 Power Supplies/Transformers

- Flexible foam shall be used to protect the units. A minimum double-wall corrugated shall be used for the outer package.
- Adequate protection shall be utilized to protect heavy parts during transport

9.3.16.4 Pressurized Cans

Shall be treated as a hazardous material and shall meet all government regulations, unless otherwise stated as exempt (refer to Section 9.3.9 for additional details).

9.3.16.5 Oversized Items

Follow the general requirements of this document, which specify a packing structure suitable for repeated shipments and reuse.

9.3.16.6 Kits

Packaging should protect all components inside the kit during shipment, and be packaged in compliance with the above standards, with the entire kit packaged in one box and labeled as one quantity.

9.3.16.7 Circuit Boards

Electronic boards must be packaged individually. The packaging comprises two parts:

a. Sealed conductive antistatic bag ensuring protection of the board from electrostatic discharge (ESD). Only conductive antistatic bags made of multiple-layer film of polyethylene, polyester, carbon and/or a metallic layer are authorized. These bags must have a part ID label on the outside, or be translucent, so the board can be identified without opening the bag. The bag must be closed using a tamper-proof label. This provides a guarantee that the true faraday cage has been created around the board and the board is protected against static electricity.
b. Sealed corrugated fiberboard box, with markings to identify its contents, to insure mechanical protection of the board. It is recommended that a **tube and slide type package be used**.

The **slide** includes foam or other cushioning material.

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The **tube** forms the outer shell of the package. It is the less expensive part of the package and is easy to replace when it becomes damaged or covered with prior shipment labels.

External dimensions of the package shall be at least 38mm (1.5”) greater than those of the part packaged. The package must however, hold the part firmly.

The case is preferably pre-printed. The package carries the mandatory marking labels. Closure of the box must provide a guarantee to the user against all risk of opening.

The corrugated box used to deliver parts to the Global Parts must be clean and free of handwritten markings or labels other than that indicating the part number, the board origin and the package seal. This is essential to prevent errors of identification or distribution.

For repairable parts, the name of the repair or manufacturing center technician in charge of the final test, and the test date must be indicated either on the board or on the antistatic bag label.

9.3.17 Product Locator Cards (PLC)

When required, include the PLCs specified in the purchase agreement per GEHC Document #5215680GSP, *“Supplier Product Locator Card Procedure”*.

9.3.18 Methods of Marking

Use labels, stencils, printing or tagging to mark the exterior of packages. Handwriting or lettering is not acceptable.

9.3.19 Security

Do not include the product name, description, or graphics on the outside of the package if it will encourage theft or any other security risk during distribution. (i.e. TVs, Computers, Monitors, Cameras, etc.)

9.3.20 Security Banding Requirements

All individual packages weighing over 150 lbs. (68kg) that ship by air with an origination or destination in the United States, must have banding on all sides, ends, top and bottom. See Section 4.8.1 for details.

Metal banding and single use / disposable banding should not be used on service parts. Single use / disposable banding doesn’t allow for an FE to return the parts closed properly.

9.3.21 Outer Packages

The outer packages of Service Parts must be received in good condition so they can be reshipped to GEHC customers. Key considerations to protect outer packages:

1. Use high quality paper for corrugated boxes that is strong enough to support stacked and palletized loads and durable enough to avoid scuffing and tearing from minor impacts.
2. When pallets are used, they must be durable enough to withstand handling during shipment. Pallets that collapse or breakdown result in damage to the items they carry.
3. When corrugated boxes are palletized, protect the bottom layer from accidental fork damage.
4. When corrugated boxes are palletized, it is recommended that corner supports are added to both increase stacking strength and to protect the corners of the boxes from impacts.
5. Wrap the sides, ends and top of palletized loads to secure the load and to prevent moisture damage during transit.

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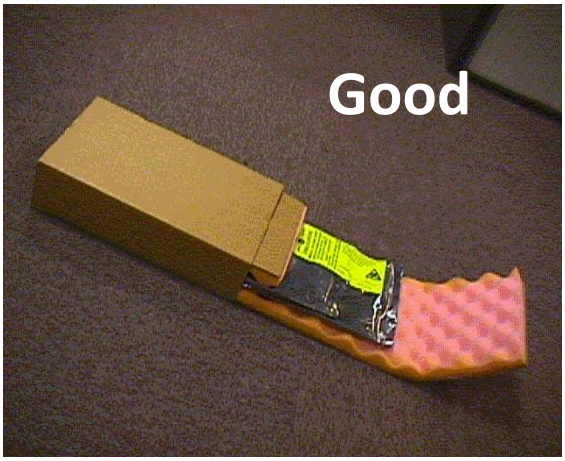
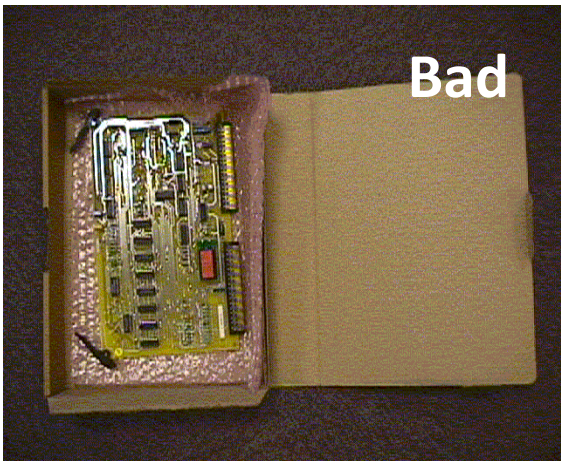
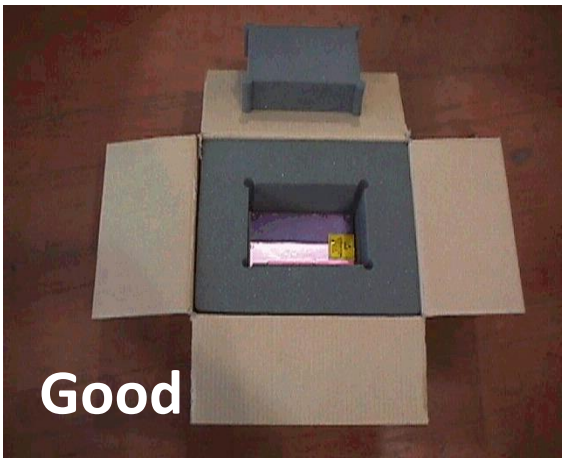
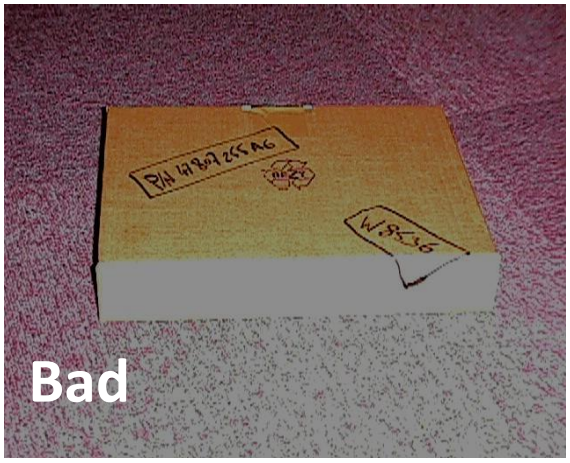
Examples of Packaging









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9.4 Labeling Requirements

9.4.1 Labeling for Different Types of Shipments to a GEHC Warehouse

All shipments to a GEHC distribution warehouse should fall into one of the following categories:

- Single carton with single piece (Section 9.4.2)
- Single carton with multiple pieces of same part number (Section 9.4.3)
- Single carton with multiple pieces of different part numbers (Section 9.4.4)

9.4.2 Single Carton with Single Piece

Bar-coded Outer Carton Label Including:

- GE Part Number
- GE PO Number
- Line Number (optional for repairable parts)
- Shipment Number (optional for repairable parts)
- Quantity in Box
- Supplier Name
- Country of Origin

(No inner label needed for single piece in carton)

Example: 1 motor in 1 box, all required information (above) is bar-coded on exterior of box.

9.4.3 Single Carton with Multiple Pieces of SAME Part Number

All parts >$20 unit cost are required to be individually packaged and labeled prior to addition to the larger container for shipment.

Inner Parts Label Including:

- GE part number
- Quantity in each package

Bar-coded Outer Carton Label Including:

- GE Part Number
- GE PO Number
- Line Number (optional for repairable parts)
- Shipment Number (optional for repairable parts)
- Quantity in Box
- Supplier Name
- Country of Origin

The system generated ASN from GE Marketplace is the PREFERED method of printing labels and will greatly reduce issues to receive material in the warehouse. (Example below):

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- The medium to be used should be **white adhesive labels with printing in black ink.**
- Labels must be placed in a visible location where they are protected from being torn off during handling.
- Labels must not be placed on top of other labels or markings unless the information being covered is not applicable to the product or current shipment.
- All **barcodes** on the label are to be **CODE 39** (sometimes referred to as CODE 3 OF 9) or **CODE 128**, as specified by the Uniform Code Council (UCC) barcode guidelines. All Barcodes must also have human readable characters below the code. Minimum height for the barcode is 0.375" high.

  Example: 250 pieces of one fuse, shipped in 1 box, which contains 10 bags of quantity 25. The exterior of the box shall have the bar-coded label for the full 250 pieces inside, while each bag will be clearly labeled with GE part number and quantity.

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9.4.4 Single Carton with Multiple Pieces of DIFFERENT Part Numbers

Inner Part Labeling

- Each part with a cost > $20 will need to be individually packaged prior to adding to the shipping container
- For inner parts labeled as "Single Carton with Single Piece" as shown in Section 9.4.2, a bar-code is required on each individual packaged part.

Outer Carton Label Including:
Language indicating multiple pieces in carton (Do not apply green seal to outer carton)

Example: A container with one $300 circuit board, three $50 power supplies, and one bag of 1000 inexpensive washers. The circuit board and each of the 3 power suppliers should be individually packaged (since they are > $20 each) including a bar-code label that includes:

- Part Number
- PO Number
- Line Number
- Shipment Number
- Quantity in Box
- Supplier Name
- Country of Origin

The 1000 washers can be shipped in one bag, and the bag should be labeled with:

- Part Number
- PO Number
- Line Number
- Shipment Number
- Quantity in Box
- Supplier Name
- Country of Origin

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9.4.5 Shipping Label Matrix Overview

Shipment Type	How to Label the OUTER Package	How to Label the INNER Package(s)
ONE part in ONE container	GEHC part number, GEHC PO number, Line number, shipment number, Quantity in box, Supplier name, Country of Origin, Expiration date (if applicable), Production Identifier (if applicable, Sec 9.4.7)	No GE Marketplace/barcode label needed. Part must have GEHC part number, quantity in box.
Multiple parts of the SAME part number in one container	GEHC part number, GEHC PO number, Line number, shipment number, Quantity in box, Supplier name, Country of Origin, Expiration date (if applicable)	Each part labeled with GEHC part number, quantity in package, Production Identifier (if applicable, Sec 9.4.7).
Multiple parts of DIFFERENT part numbers in one container	Clearly indicate that there are multiple parts inside the container (Do not apply green seals on outer box)	Each Part: GEHC part number, GEHC PO number, Line number, shipment number, Quantity in box, Supplier name, Country of Origin, Expiration date (if applicable), Production Identifier (if applicable, Sec 9.4.7).

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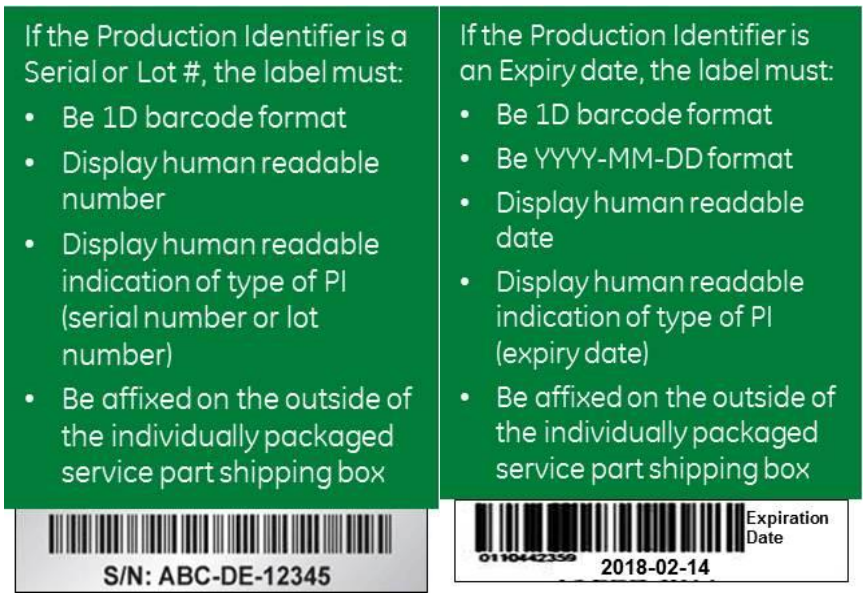
9.4.6 Items with a Serial Number

Items with a serial number should have the serial number labeled on the exterior of the individual part as requested.

9.4.7 Items that are Classified as a GEHC Medical Device, a Non-GEHC Medical Device, an item that Contains a Medical Device, or any other item that GEHC Service must track

Items that are classified as a 'GEHC Medical Device', a 'Non-GEHC Medical Device', an item that 'Contains a Medical Device', or any other item that GEHC Service defines as needing individual item tracking should have a Production Identifier label on the exterior of the individual part carton. The label should contain the production identifier in both barcode and human readable format and should specify the type of production identifier used (serial number, lot number, expiration date, manufactured date).

For items that are serial controlled and/or lot controlled, the system generated ASN from Supplier Connect is the PREFERED method of printing labels, as this label contains the proper production identifier format and will greatly reduce issues to receive material in the warehouse.



An individual label containing the Production Identifier (Serial Number and/or Lot Number) is not necessary if the ASN label from Supplier Connect is used. However, the ASN Label does not contain the Expiration Date, so a separate label containing it would be required, if applicable.

9.4.8 Label Placement

When using overnight carrier services or other express delivery systems, the address and barcode labels should be applied to the top of the package to allow reading by automatic scanning equipment. All parts must be placed in a box of sufficient size to accommodate both the bar-coded supplier label and good to stock package seal.

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9.4.9 Packing List for Service Parts

May include a packing list that includes:

- GEHC Part Number
- PO Number
- PO Release Number
- Quantity Of Parts In The Shipment
- Country Of Origin (Use country code, not EU)
- Delivery Address (# from bill-to address)
- Shelf Life (If Applicable)
- Hazardous Information & Safety Sheet (If Applicable)

9.5 Package Seal Requirements

9.5.1 Green Good to Stock Seal (DOC0552387 *"Service Part Good to Stock Label"*)

All Good to Stock parts that are individually packaged (> $20 unit cost) are required to have a green seal applied at all entry points (usually two places).

The terms "Good to Stock" and "Green Seal" are interchangeable.

9.5.1.1 Repair Suppliers

Upon completing a part's repair, and passing final tests, a Repair Supplier will complete appropriate information on the "Good to Stock" Package Seal (Green Seal). This is done prior to shipping the repaired part to the network for placement into inventory for order fulfillment.

9.5.1.2 SwaP Suppliers

Supplier Warranty Program, SwaP Supplier will ensure that the Serial Number or Barcode number is printed in the GE barcode format and affixed to the "Good to Stock" Package Seal (Green Seal) in the appropriate location. This requires the use of the "Good to Stock" seal (Green Seal) in accordance with the minimums specified below.

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All Suppliers, (including Repair, Multivendor, Consumable)

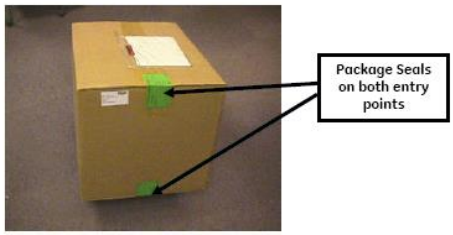
Use the Good to Stock seal (Green Seal - DOC0552387) in accordance with the minimums specified below:

Requirements	Repair Supplier	SwaP Supplier	All Other Suppliers	Warehouse
Suppliers check off the Supplier Box Warehouse check off the Warehouse Box	X	X	X	X
Serial Number or Barcode Number (If applicable)	X	X		
Date	X	X		
Repair Supplier	X			
Repaired By (Name/Number)	X			
GE Part Number	X			

HOW TO SEAL A PACKAGE:

For repaired parts

For consumable parts



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9.5.2 Green FE Reseal (DOC0552389 "Service Part Field Service Return Label")

To be used as indicated by the return rule on the return label (as shown below)

- Field and Customer Returns of unused, unopened goods, and surplus items

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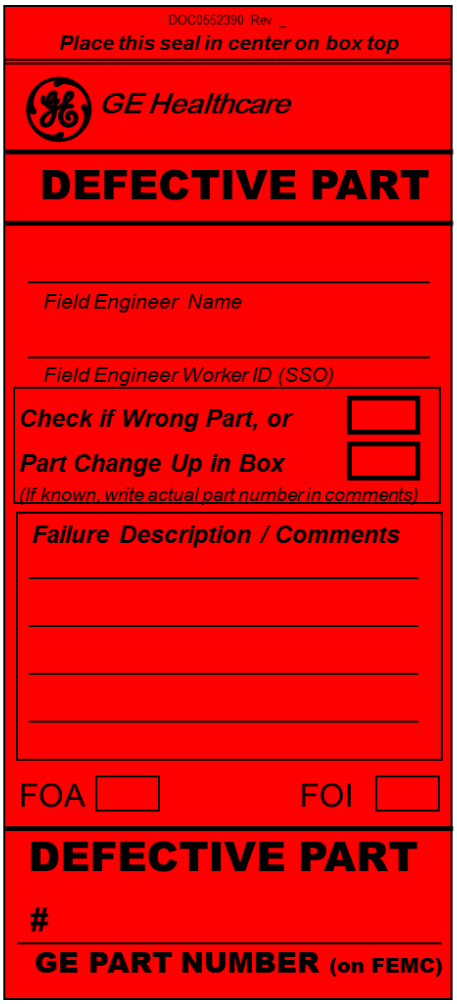
9.5.3 Defective FE Reseal (DOC0552390 "Service Part Defective Part Return Label")

To be used as indicated by the return rule on the return label (as shown below)

- Defective Items which have been Debriefed
- Wrong Parts Received
- FOA/DOA Items
- FOA/DOI Items
- Change Up Returns of Defective Items



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9.5.4 Recycling FE Reseal (DOC0552391 "Service Part Recycling Return Label")

To be used as indicated by the return rule on the return label (as shown below)

- ONLY USE WHEN INDICATED BY THE RETURN RULE. ALL items with Purple Seals are sent directly to recycling

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9.6 Process for Suppliers to Order or Create Labels

9.6.1 Package Seals

- Good to Stock – part number **DOC0552387**
- Field Service Reseal – part number **DOC0552389**
- Defective Part – part number **DOC0552390**
- Recycling – part number **DOC0552391**

Email – georders@marekgroup.com, USA Phone Number – 262-549-8924 or 262-549-8900

Suppliers must provide to Marek Group Inc., their shipping address, shipping contact, phone number, and billing address for package seals.

NOTE 1: Marek Group Inc. will direct bill Suppliers for all labels

NOTE 2: With written consent from GEHC, a Supplier can provide an equivalent label, provided the information, format, size, and color, are as defined in the documents referenced above.

9.6.2 Package Weight Identification and Handling Restrictions

- Red > 32 kg (70 lbs.) Mechanical Lift (part number **5325888**)
- Yellow 16 – 32 kg (35 – 70 lbs.) 2 FE's or Mechanical Lift (part number **5325887**)

Email – georders@marekgroup.com, USA Phone Number – 262-549-8924 or 262-549-8900

Suppliers must provide to Marek Group Inc., their shipping address, shipping contact, phone number, and billing address for package seals.

NOTE 1: Marek Group Inc. will direct bill Suppliers for all labels

NOTE 2: A Supplier can provide an equivalent label, provided the information, format, size, and color are as defined in 5325888 and 5325887.

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10.0 Exhibits

10.1 Exhibit #1 – Package Type Descriptions

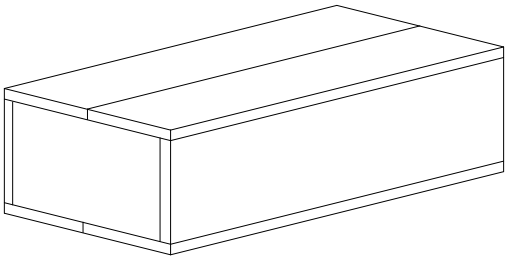
The following package descriptions provide general information about the different types of packages available for international shipment and a brief summary of typical applications for each.

10.1.1 Wood Box – Application Summary

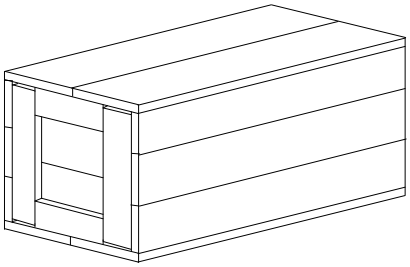
Wood boxes are typically used to package smaller products for international shipment. Many styles and designs are available to accommodate the different size, weight and type of product to be contained. Wood boxes provide good product protection and offer excellent stacking strength. They can be used for air and ocean shipments to both good and poor receiving points.

Typical Nailed Wood Box Examples

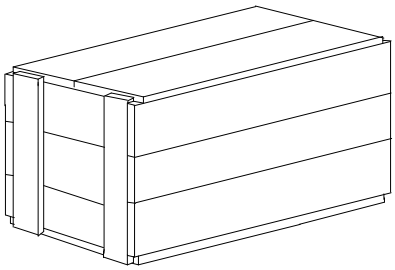
Style 1



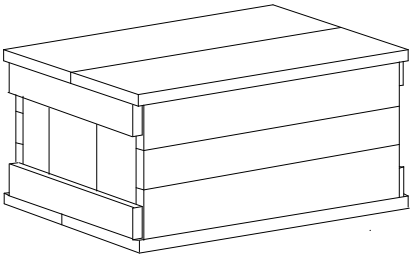
Style 2



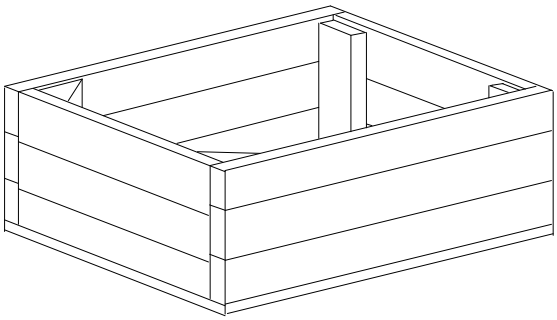
Style 4



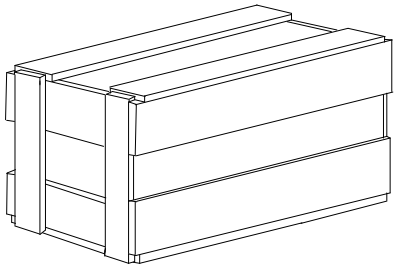
Style 4-1/2



Style 5



Open Style



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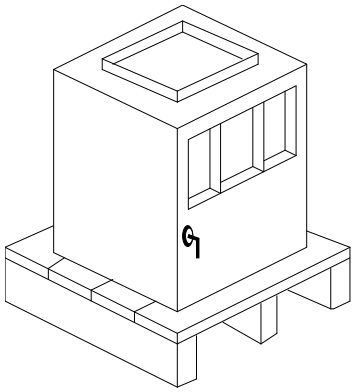
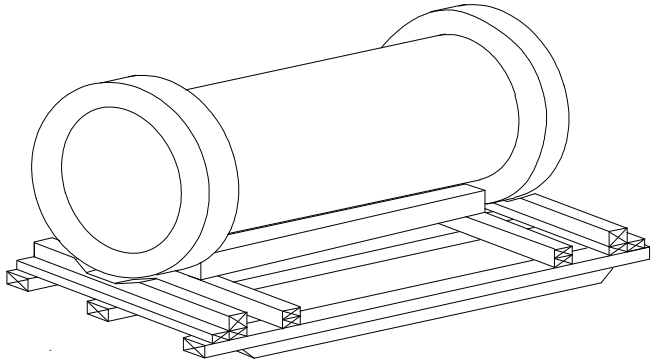
10.1.2 Product on Wood Base – Application Summary

With this type of minimum pack, the product typically has very little, if any protective packaging. It is secured to a wood base that provides a means for mechanical handling. This type of packaging typically would only apply in Pole-to-Pole Shipments that occur in very controlled environments. Mutual consent and coordination is always required. See the following figures for examples of products on wood bases and Section 10.2, Exhibit #2 for wood base design criteria.

Product on Wood Base Examples

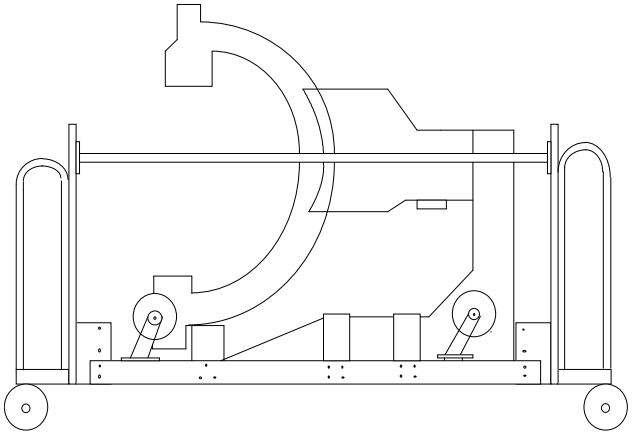




10.1.3 Product on Shipping Dolly – Application Summary

With this type of minimum pack, again the product typically has very little if any protective packaging. It is secured to a shipping dolly that provides some protection for the product and provides a means for handling. This type of packaging would also typically only apply in Region-to-Region Shipments that occur in very controlled environments. Mutual consent and coordination is always required.

Typical Product on Shipping Dolly



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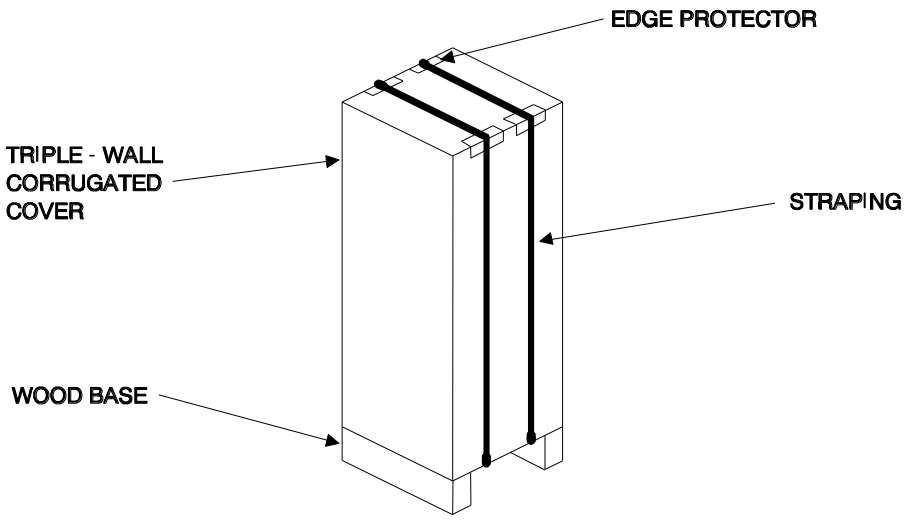
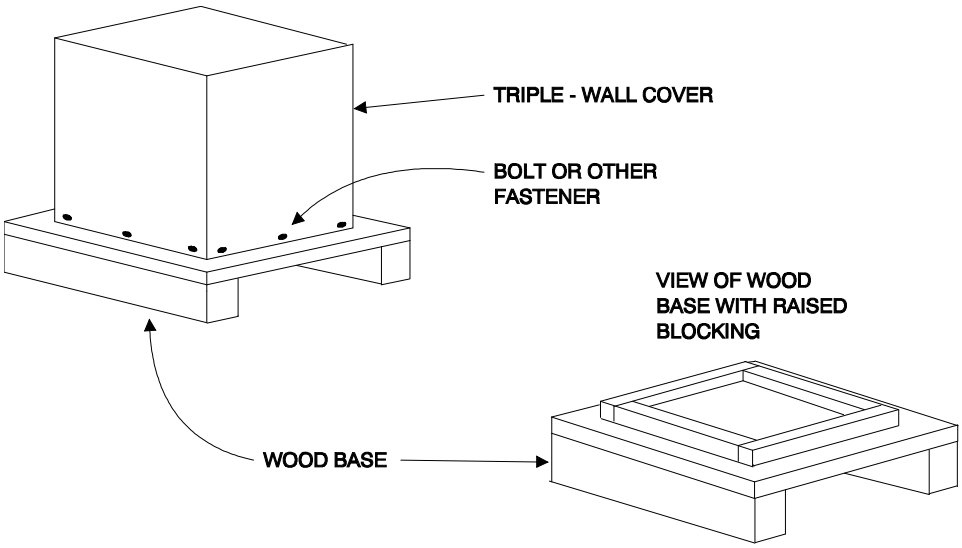
10.1.4 Triple-wall Corrugated Cover on Wood Base – Application Summary

Some products can be shipped on a wood base with a triple-wall corrugated cover for air and ocean shipments. This type of package can be used for medium to large products, usually at a lower cost and shipping weight than wood boxes or crates. The product must be secured to the wood base or held securely within the package. The package provides some stacking strength, but if stacking is expected, internal blocking and/or the product must provide additional stacking strength. The following figures show typical examples of a triple-wall cover secured with bands and a cover secured with fasteners to raised-up blocking on the wood base. Both options are reusable.

Triple-wall Cover Secured with Bands



Triple-wall Cover Secured to Base with Fasteners



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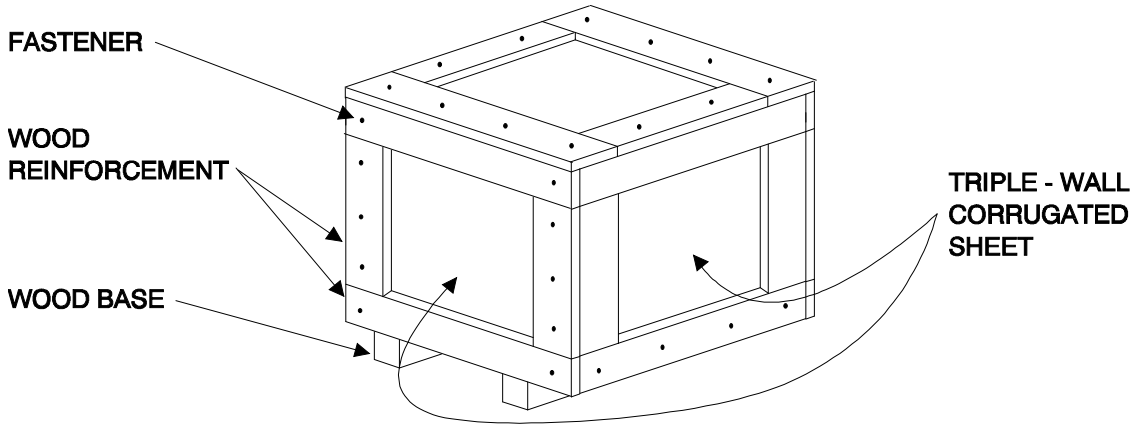
10.1.5 Wood Reinforced Triple-wall Corrugated on Wood Base – Application Summary

Wood reinforced triple-wall corrugated packages are similar in design to plywood crates or boxes, with the triple-wall material used as a substitute for the plywood. This typically reduces material cost and package weight. This type of package works well for larger products shipping by air but has limited application by ocean because the triple-wall corrugated does not resist moisture as well as plywood.

One typical style is designed with Side, End, and Top panels similar to plywood crates, with triple-wall corrugated used in place of plywood.

Panel Style Wood Reinforced Triple-wall Corrugated Package



Another style is designed with a wood framed end panel and a large, one-piece wrapper of triple-wall corrugated that makes up the sides and top of the crate. This design requires internal blocking if stacking is required.

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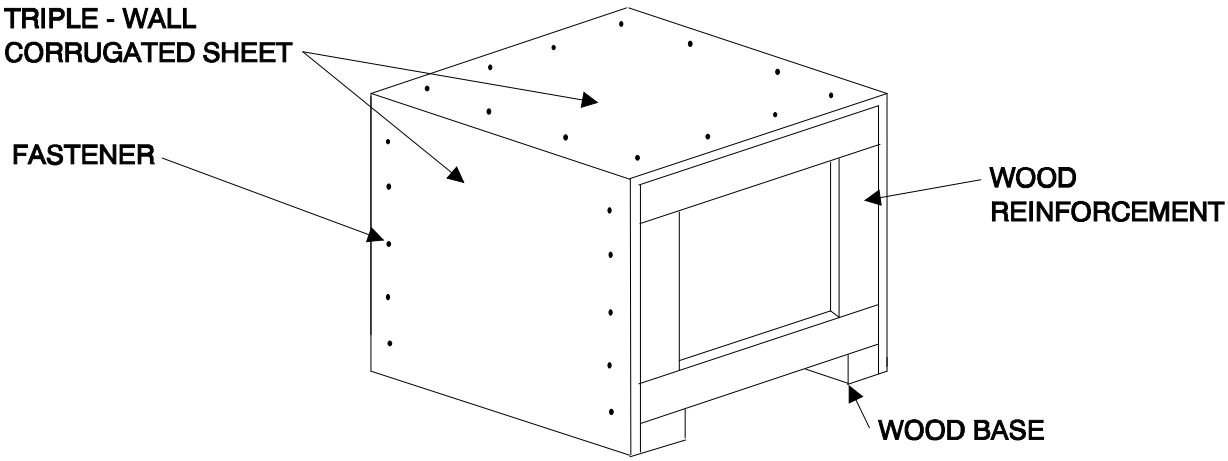
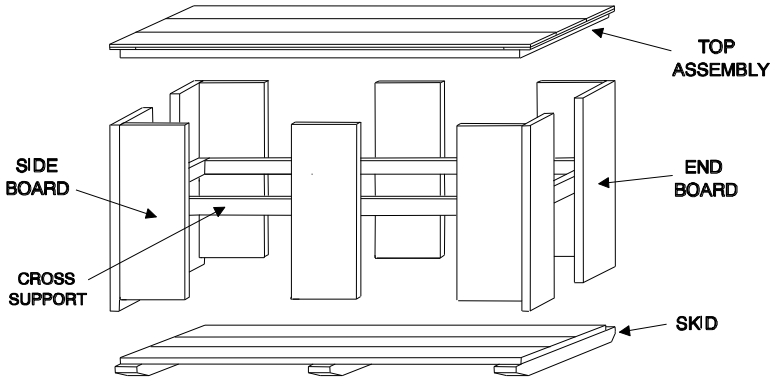
Wrapper Style Wood Reinforced Triple-wall Corrugated Package



10.1.6 Open Wood Crate – Application Summary

Open wood crates can be used for air shipment of large products where transportation and handling on the receiving end is good or under control. Open crates protect the product from other freight and also, provide some stacking strength. They do not provide the same strength and security as a solid crate but reduce material costs and shipping weight.

Typical Open Wood Crate Example



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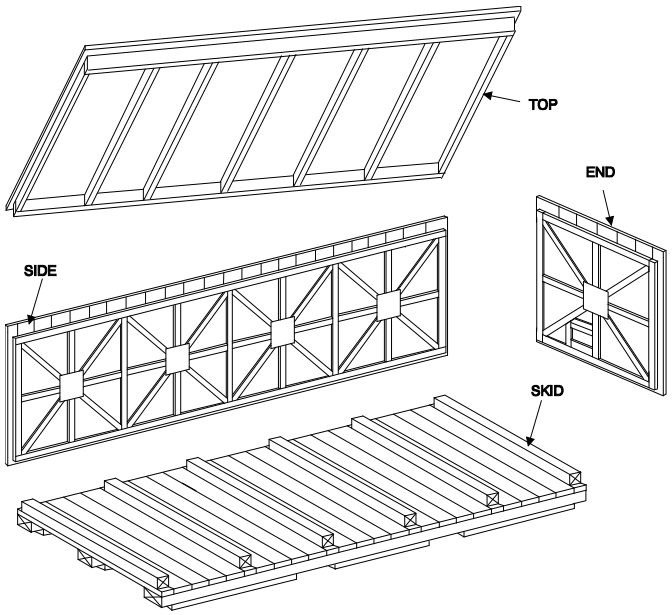
10.1.7 Solid Wood Crate – Application Summary

Solid wood crates provide a high level of product protection and stacking strength. They are used for large products for air and ocean shipment. The negative factor with these crates is their high cost, weight, and the problems with disposal of the large amount of wood at the receiving end.

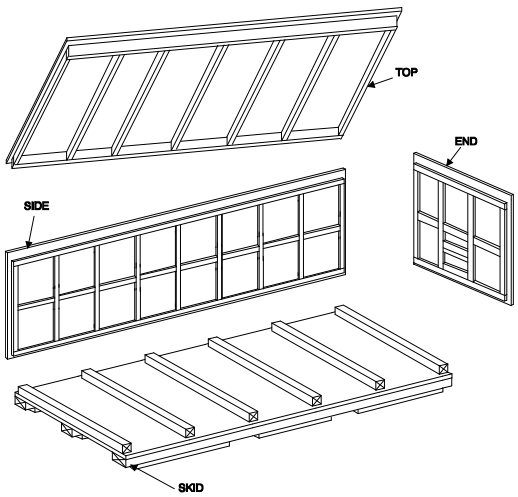
Typical Solid Wood Crate Example



10.1.8 Plywood Crate – Application Summary

A plywood crate is very similar to a solid wood crate, with the exception that plywood or a similar sheet type material is used in place of boards for the side, end, and top panels. These crates are used for large products for air and ocean shipment.

Typical Plywood Crate Design



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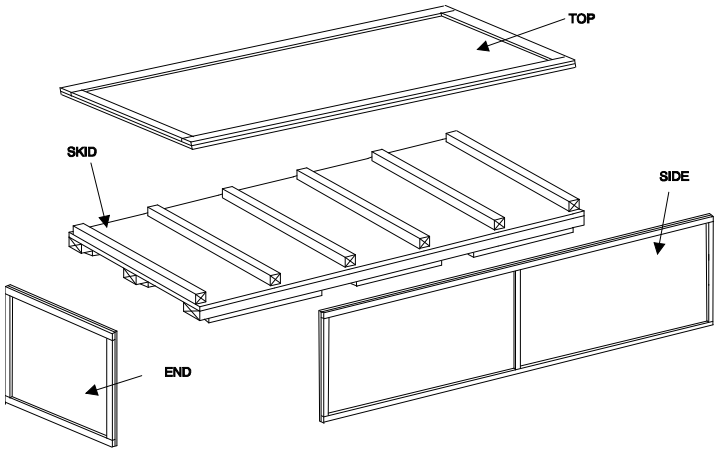
10.1.9 Wood Reinforced Triple-wall Corrugated Crate – Application Summary

A triple-wall corrugated crate is very similar to a plywood crate with the exception that triple-wall corrugated is used in place of plywood for the side, end, and top panels. These crates are used for large products for air shipment and select ocean shipments.

Typical Wood Reinforced Triple-wall Corrugated Crate Design



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10.1.10 Corrugated Box, Loose

10.1.10.1 Single & Double Wall Corrugated Boxes

Do not ship single and double wall, corrugated boxes loose internationally by air or ocean, except under special conditions.

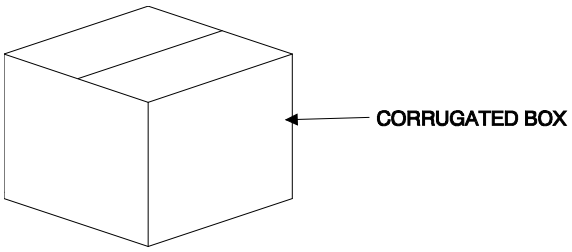
Boxes under 0.25 cubic meters (8 cubic feet) can be shipped loose by an express carrier like Federal Express, as long as the box and internal blocking provide adequate product protection and stacking strength. Do not ship boxes of this size loose as part of a system shipment.

10.1.10.2 Triple Wall Corrugated Boxes

Triple wall boxes of any size with a minimum burst strength of 900# can be shipped loose internationally by air as long as the box and its internal blocking provide adequate product protection and stacking strength.

These boxes can also be shipped as part of controlled containerized ocean shipments. The box and its internal blocking must provide adequate product protection, moisture protection, and stacking strength, to support stacking weights anticipated during distribution.

Typical Corrugated Box



10.1.11 Corrugated Box on Wood Base

When the gross weight of a corrugated box exceeds 32 kg (70 lbs.) for finished goods and 25 kg (50 lbs.) for service parts, or for other reasons that make manual handling difficult, secure it to a wood base to allow mechanical handling. Corrugated boxes meeting the criteria from Section 10.1.10 and shipping on wood bases can be shipped internationally by air when going to a good receiving point, or when part of a controlled shipment. They should only be shipped by ocean when part of a controlled containerized shipment. The box and internal blocking must provide adequate product protection and stacking strength.

Multiple corrugated boxes meeting the criteria from Section 10.1.10 may be unitized on a wood base and secured with strapping, stretch wrap, shrink-wrap or other adequate material. The wood base must be the same length and width as the box(s), or larger, and strong enough to support the gross weight of the pallet load.

The corrugated box(s) should not overhang the wood base.

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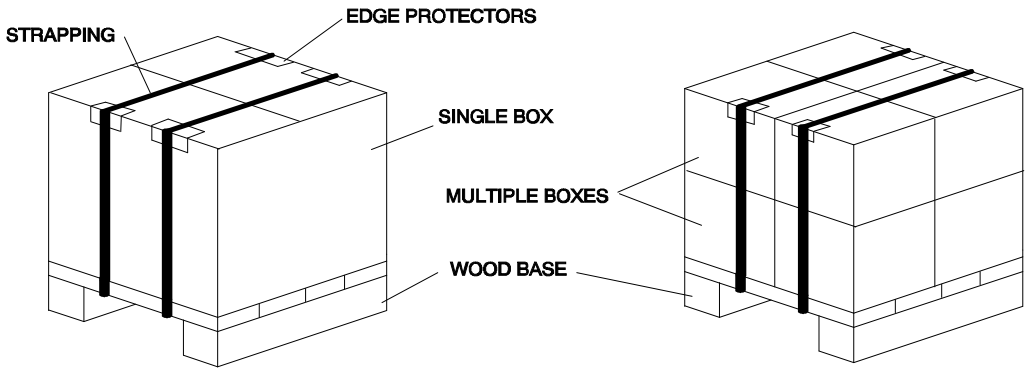
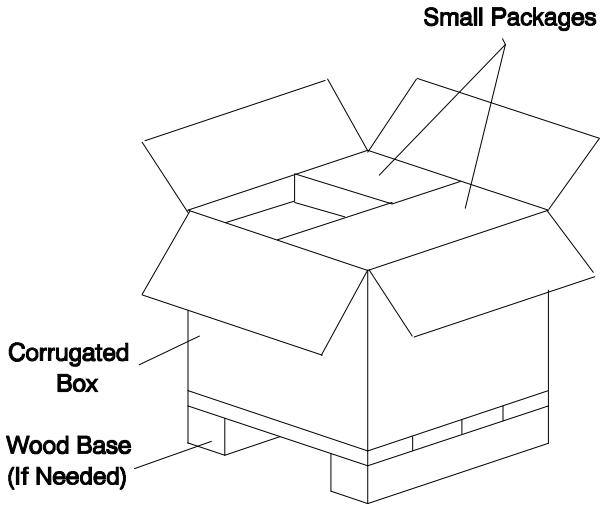
Typical Examples of Single & Multiple Corrugated Box(s) On a Wood Base



10.1.12 Small Packages Consolidated in a Larger Corrugated Box – Application Summary

Consolidate small packages shipping together into a larger package to help prevent loss and damage. A large, corrugated box meeting the criteria described in Section 10.1, Exhibit #1, Paragraphs 10.1.10 and 10.1.11, can be used to accomplish this for air transport to good and/or controlled receiving points and controlled containerized ocean shipments. The package provides some stacking strength, but internal blocking and/or the inner packages may be required to support stacking weight.

Small Package Consolidation in Large Corrugated Box



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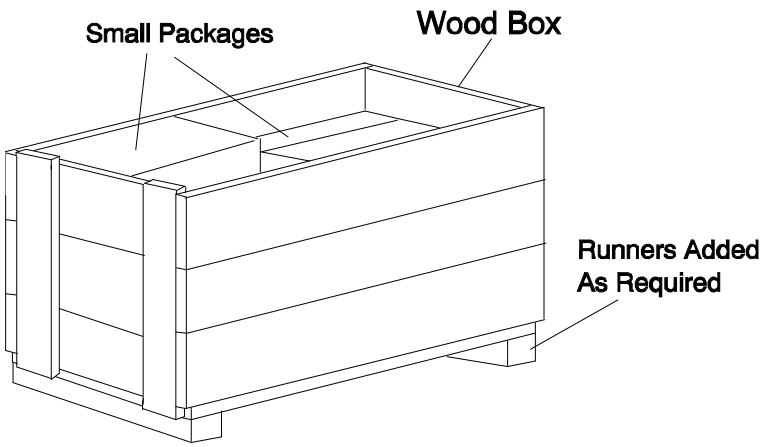
10.1.13 Small Packages Consolidated in a Larger Wood Box – Application Summary

Consolidating small packages in a wood box is similar to consolidating them in a corrugated box, except that it provides a much stronger, more secure package. It can be used for all air and ocean shipments. Inner blocking is normally not required.

Small Package Consolidation in Wood Box



10.1.14 Lean Packaging

Lean Packaging utilizes visual management and simplification to present components and finished products to manufacturing and the installation site in an efficient and logical order.

10.1.14.1 Lean Packaging for Manufacturing

Lean packaging for manufacturing delivers parts and components to the manufacturing line or assembly area with minimal packaging, allowing the operator to visually see all of the components and quickly locate parts needed during the manufacturing process. It also minimizes the amount of scrap packaging material in the manufacturing area.

Typical Manufacturing Lean Cart

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10.1.14.2 Lean Packaging for Delivery & Installation

Lean packaging for delivery and installation delivers finished good parts to the customer site in a manner that allows fast and efficient delivery and keeps parts safe and easy to locate during the installation process.

Typical Installation Lean Cart

10.1.15 Construction Site Packaging

Construction site packaging seals products in a dust resistant covering to provide protection from contamination in an environment that does not meet normal customer site cleanliness requirements. The most common example is a site that is still under construction after the product has been delivered.

The following is an example of construction site packaging for a CT Gantry:

- ✓ Dollies Removed Allowing Plastic Wrap On All Sides
- ✓ Desiccant & VpCI Added Inside Plastic Wrap
- ✓ Dollies Replaced Creating Minor Holes in Plastic
- ✓ Corrugated Sheet Added Under Base to Protect Bottom Plastic
- ✓ Goal – 99% Dust Protection

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10.2 Exhibit #2 – Wood Base/Pallet Design Criteria

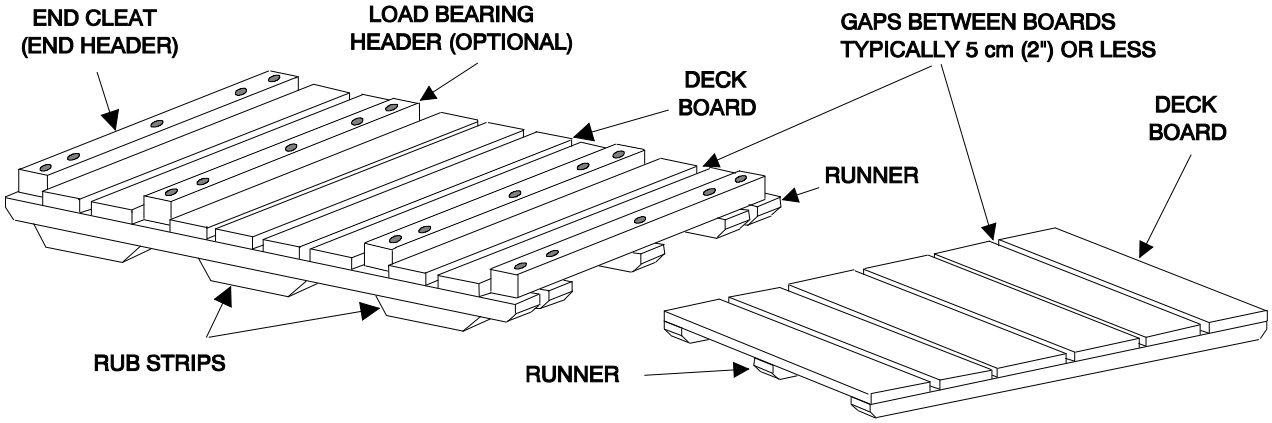
10.2.1 General

The design of the wood base is very important, because it provides the basis of the strength of the entire package, and it also provides the means for mechanical handling and securement of the product.

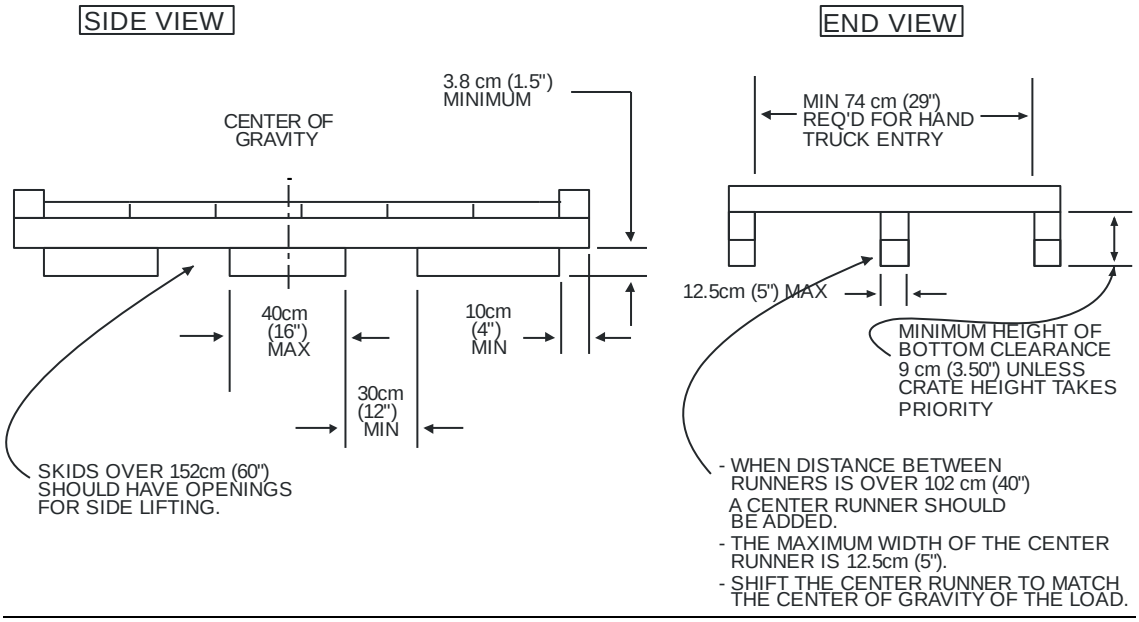
10.2.2 Standard Design Characteristics

Some characteristics of the base design are consistent for all products, including height of runners, runner spacing, fork hole openings, etc. See the following figures for typical base designs and specifications.

Typical Skid (Base) Designs



Typical Skid (Base) Specifications



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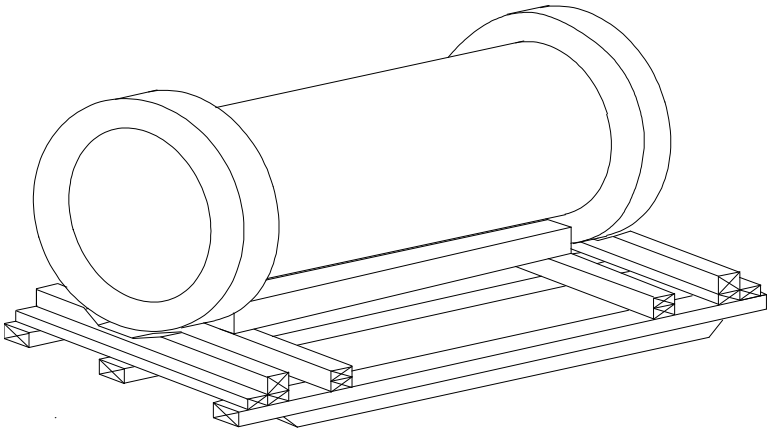
10.2.3 Special Design Wood Base

Most wood bases are designed specifically to match a certain product. This takes into consideration the products size, weight, center of balance, and any special support or handling requirements. The following is an example of a wood base designed for a specific product.

Note: The standard design characteristics described above must also be followed.

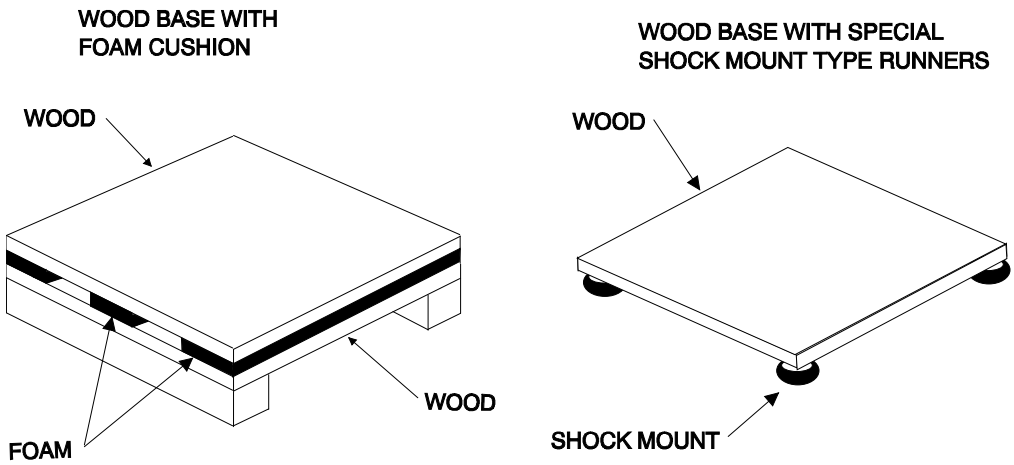
Special Design Wood Base



10.2.4 Cushioned Base

Special cushioning materials can be incorporated into the design of a wood base to provide protection from shock and vibration. The base is specifically designed to bring anticipated shock and vibration levels within the fragility limits of the product. Typical examples include:

Cushioned Base



Note: When plastic "Shock Mount" type cushions are used as exposed runners, they must be bolted to the wood base. Experience shows that wood screws typically tear out.

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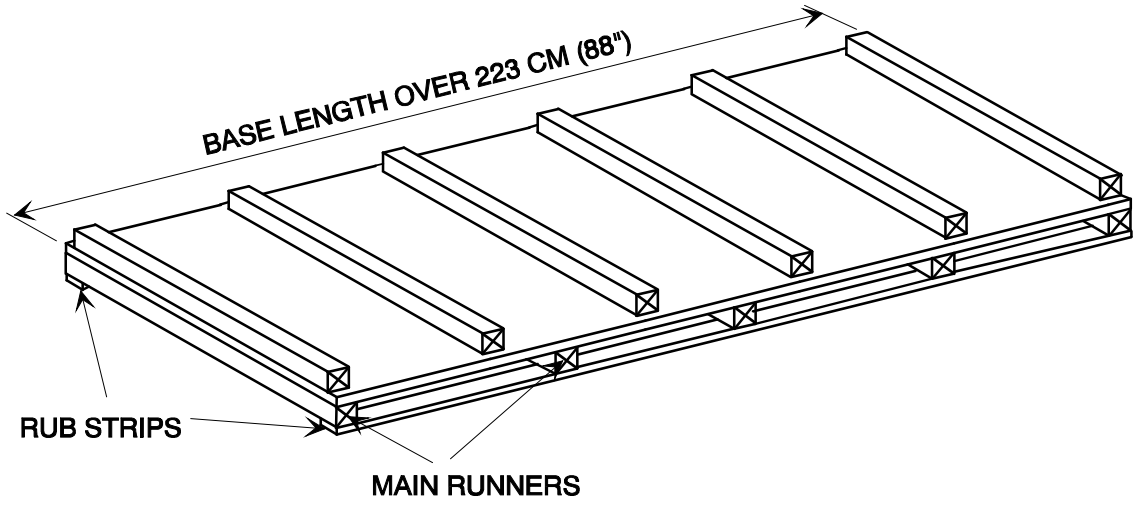
10.2.5 Long Bases with Rub Strips

Add rub strips under the main runners of bases that are over 223 cm (88”) long. Crates over this length are often lifted from one end then pushed and dragged. Rub strips will help prevent the main runners from catching and tearing torn off.

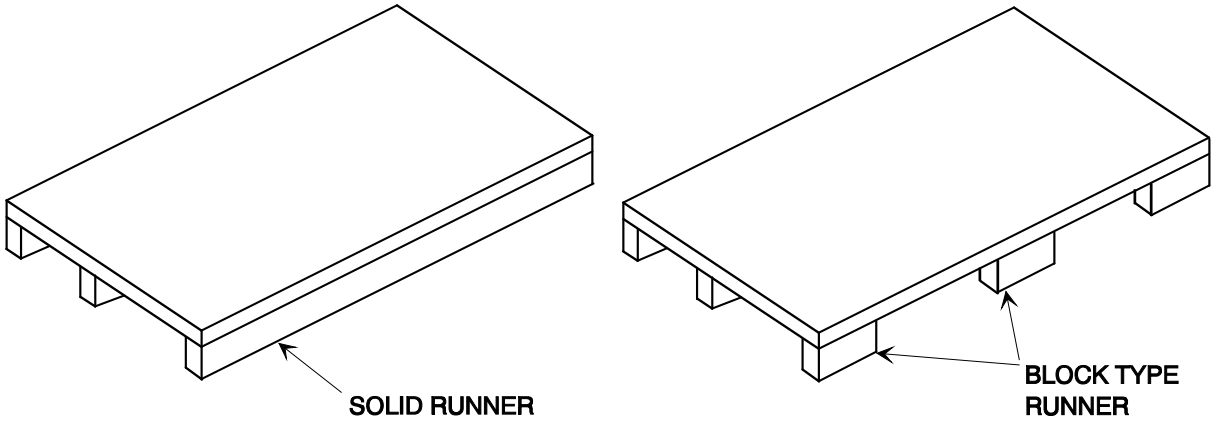
Long Base with Rub Strips



10.2.6 Solid Runners vs. Block Style Runners

Solid runners are preferred over block type runners when possible because block runners tear off more easily during transport.

Solid Runner and Block Runner Examples



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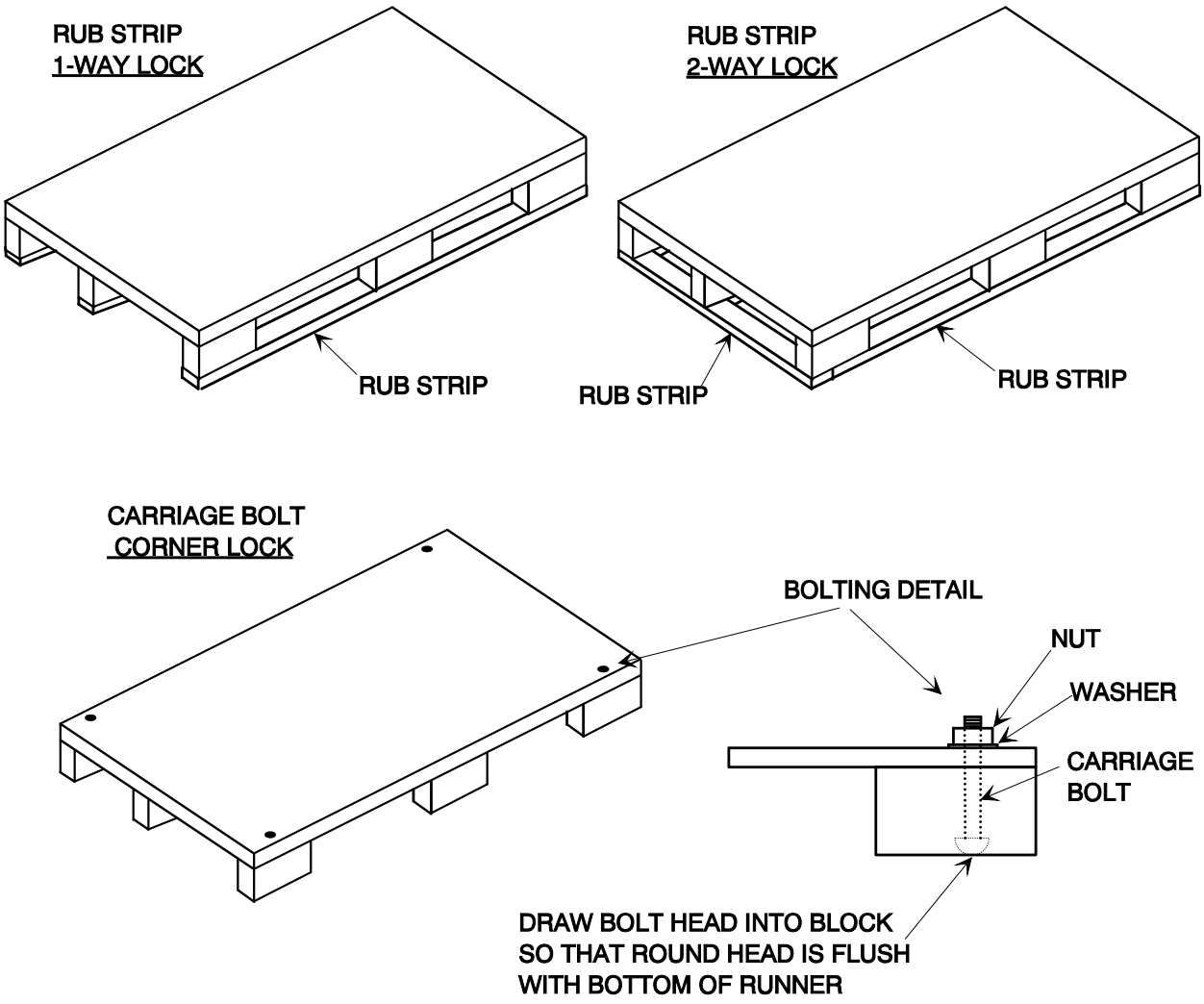
10.2.7 Block Runner Securement

Block runners must be securely attached to the base to prevent them from tearing off during fork truck handling. When nailed, they must be secured with ring shank nails. For added support, it is recommended that rub strips be added under the blocks. One-way locking rub strips are good, but two-way locking rub strips are best. If rub strips cannot be added, secure the four corner blocks with carriage bolts.

Block Runner Securement Examples



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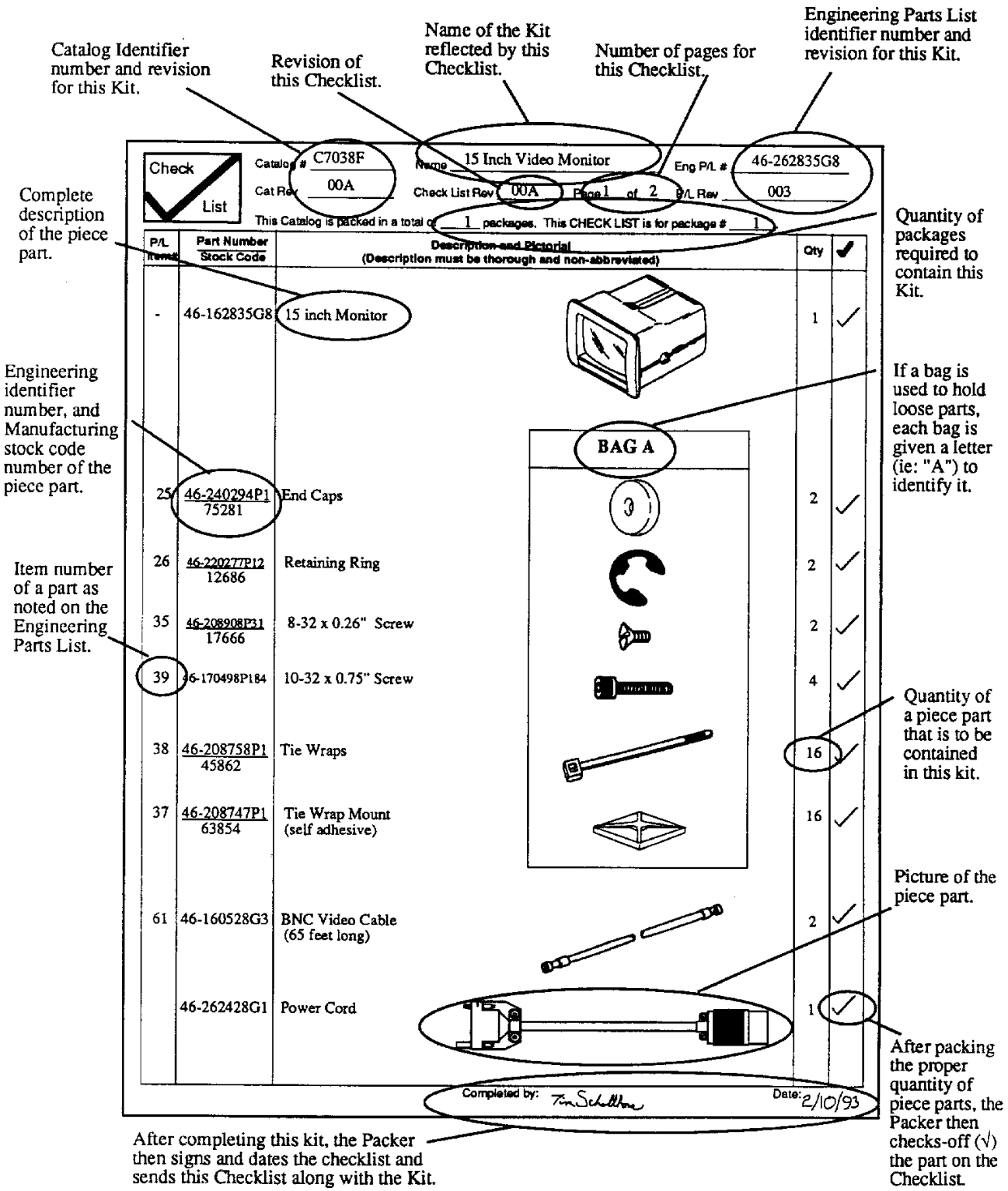
10.3 Exhibit #3 - Typical Checklist Example



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10.4 Exhibit #4 – Typical Export Packing List Example

GE Healthcare

Packing Slip

Page: 1 of 5

ORG CTM

Ship To
GE MEDICAL SYSTEMS ITALIA SPA
C/O MIT SAFETRANS
VIA DELL'ARTIGIANATO 12
CARUGATE, 20061
Italy

Ship From:
GEMS CT Manufacturing
GEMS CT Manufacturing
3000 North Grandview Blvd
Waukesha, WI 53188
United States

Checked By:
Requested Date: 08-JUN-2007
Approved By:
Waybill:

Customer PO#: See Below
Packing Slip: 5407514
Ship Method:
Carrier:

Delivery Name: 9517773

Item Number	Description	Order # / Line #	Qty Shp	Cnt#
B7864TS	GT 1700 TABLE	1237420 1.1	1	2,6
	Customer PO:2691674.5			
B7864JP	VCT OPTION KEY	1237420 2.1	1	5
	Customer PO:2691674.5			
B7864JG	VCT GANTRY	1237420 3.1	1	1,3,6
	Customer PO:2691674.5			
B7864JD	VOL.SHIP COLLECTOR	1237420 4.1	1	5,5,5,5
	Customer PO:2691674.5			
B7858LC	LCD MONITOR_2PC/KIT	1237420 5.1	1	3,3
	Customer PO:2691674.5			
B72352CA	NGPDU-4 FOR VCT	1237420 6.1	1	4
	Customer PO:2691674.5			
B7864HS	VCT TECHPUB/OS/SW(SM RM)	1237420 7.1	1	5
	Customer PO:2691674.5			
B7864MC	VCT CONSOLE (8200)	1237420 8.1	1	3,3,3
	Customer PO:2691674.5			

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10.5 Exhibit #5 – Typical Supplier Packing List Example

PACKING SLIP FORMAT AND LAYOUT IS NOT CRITICAL.

Supplier ABC
12345 Main St.
Anywhere, USA 54321
(111) 222-3333

Page 1 of 1

Packing List #: 111111
ASN / Shipment #: 222222
Ship Date: 01/02/01

ASN / Shipment # must be clearly labeled as "ASN / Shipment #"

Supplier Order #: 333333
Customer Order/PO#: 3000123450001
Order Date: 01/01/01
Ship Method: FEDEX
FOB: Origin

Include Modality (XR, MR, etc.) in Ship-To Address

SHIP TO: G.E. Healthcare
X-Ray Manufacturing
3000 N. Grandview Blvd.
Waukesha, WI 53188
United States

BILL TO: G.E. Healthcare
PO Box 60560
Fort Meyers, FL 33906
United States

Line #	Quantity Shipped	U/M U/M	Part / Catalog # Description
1	10	EA	2304313 Bracket

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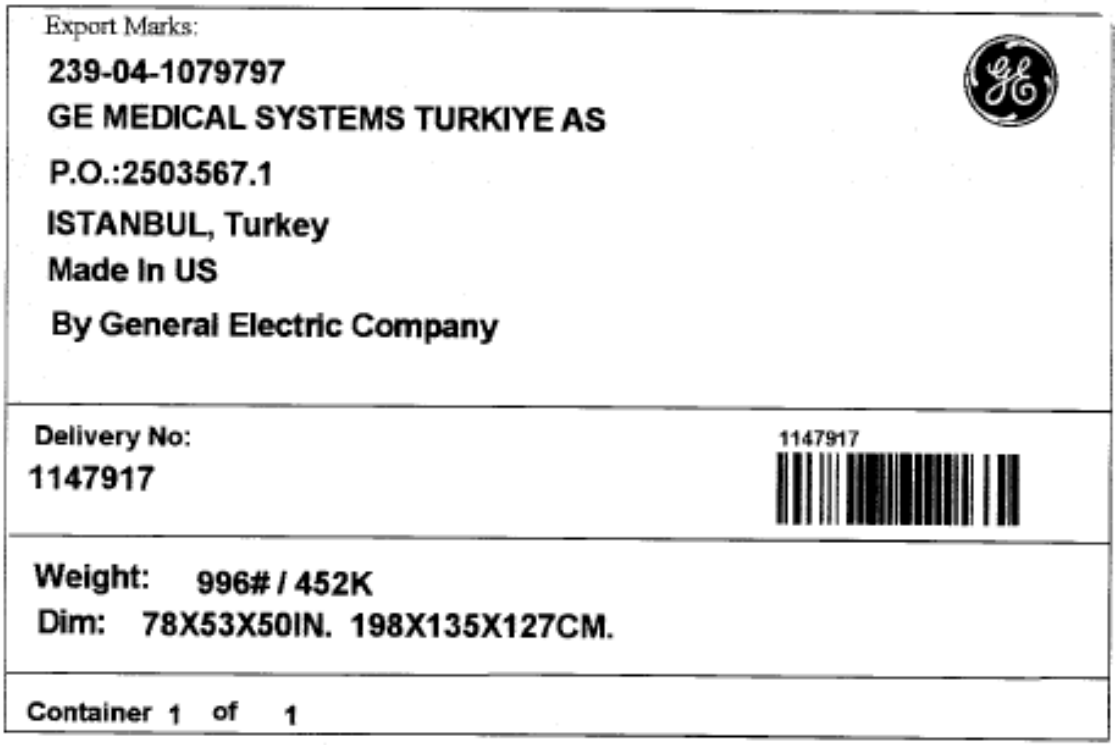
10.6 Exhibit #6 – Typical Shipping Label Example



Note: Label shown is for example only. "Made in" requirements vary by country. Check local requirements for the appropriate wording for your site.

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10.7 Exhibit #7 – Typical ISO Receiving Label Example

Ship To Address:	GE MEDICAL SYSTEMS TURKIYE AS KESKIN KALEM SOK. No.5 ESENTEPE ISTANBUL, 80280 Turkey
Ship Date: 12-AUG-03	Shipment Origin: United States
Carrier Name:	
Shipper Name:	
ASN NO: ASN1147917CTM	
Receive via:	ASN Receiving
Container:	1 of 1

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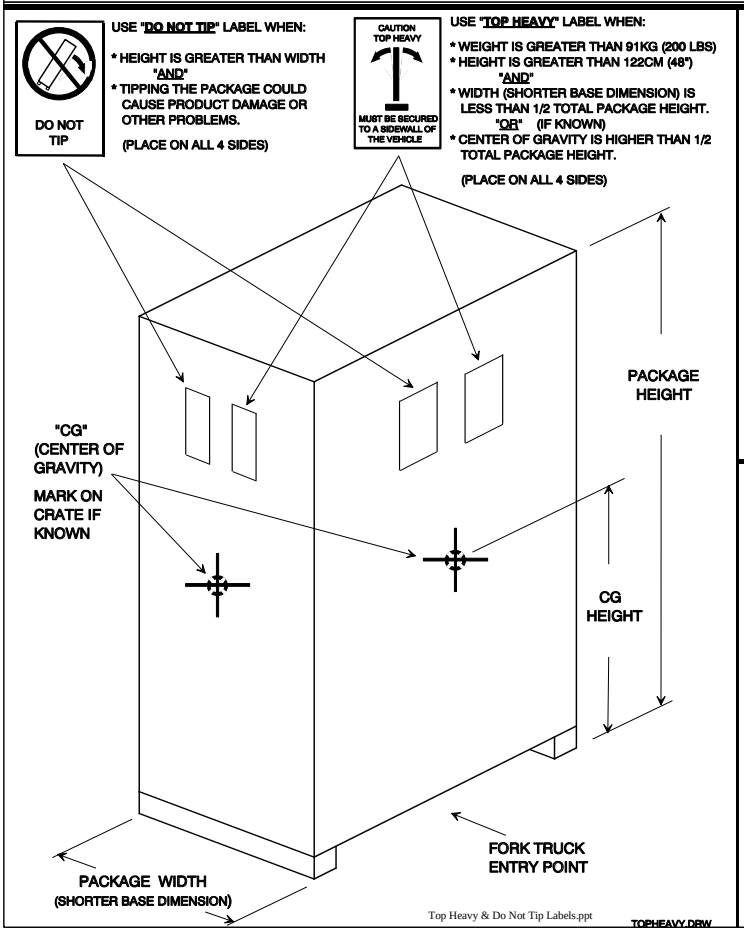
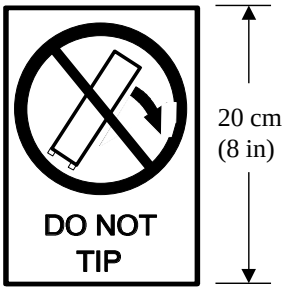
10.8 Exhibit #8 – "Top Heavy" and "Do Not Tip" Labeling Guidelines

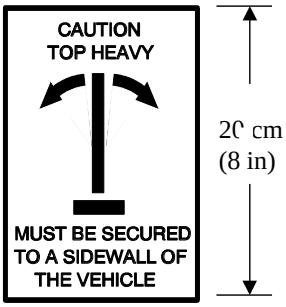
TOP HEAVY & DO NOT TIP LABEL GUIDELINES



DO NOT TIP LABEL



TOP HEAVY LABEL



NOTE:
Label Dimensions Shown Are The Minimum Size.

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10.9 Exhibit #9 – Guide for the Proper Use of Tilt Indicator Labels

This section provides guidance for the proper usage of tilt indicator labels with GEHC products. Recommendations and guidelines for the selection and application of these labels, guidelines for handling products received with activated labels, and a general summary of label requirements in the different areas of the world are provided.

Note: The TILTWATCH labels described are manufactured by Media Recovery Inc. and some of the information provided is taken from recommendations by Media Recovery Inc. Other types of tilt indicators are available and follow similar guidelines.

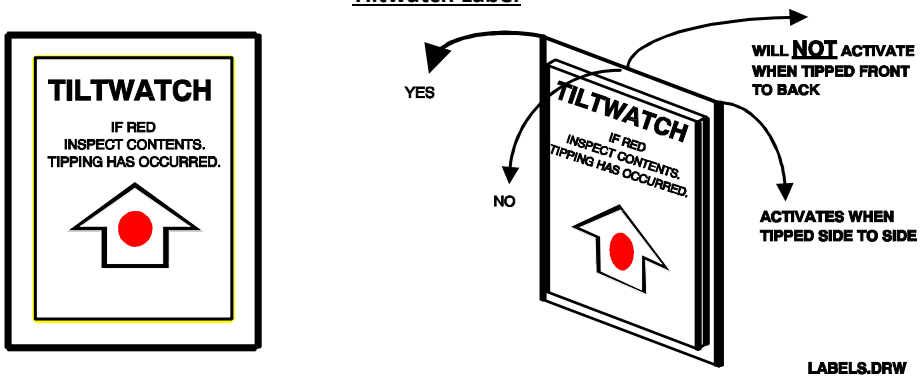
ATTENTION: ShockWatch impact indicators are no longer to be purchased as the product does not provide proven value to product quality or reliability. GE Healthcare no longer requires or endorses the use of ShockWatch impact indicators for any transportation or packaging applications.

10.9.1 Definitions

10.9.1.1 Tilt Indicator Label

A pressure sensitive, active label that turns red when tilted 89 degrees or more from horizontal. The labels activate when tilted side to side, but may or may not activate when tilted front to back. See example below:

Tiltwatch Label



"TILTWATCH" is a registered trademark of Media Recovery, Inc.

10.9.1.2 False Activation

When an active label turns red or changes form in some way to indicate that a package has encountered a predetermined physical event, but the event has not actually occurred.

10.9.1.2.1 "Tilt Indicator" labels do not easily false trigger. The label must be physically tilted 89 degrees or more from horizontal to activate the labels. False activation may occur if the label receives a tipping motion and some level of shock or vibration at the same time, but this condition is not considered common.

10.9.1.3 Tip

In this guideline, "Tip" is defined to mean that a package has been physically tipped at least 90 degrees from horizontal, but that the item did not receive a violent impact shock as a result of the tipping action.

10.9.1.4 Tip Over

In this guideline, "Tip Over" is defined to mean that a package has been physically tipped at least 90 degrees from horizontal and in the process has received a violent impact shock as a result of the tipping action.

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10.9.1.5 Concealed Damage

Non-visible product damage that occurs inside of a package. The external package usually does not indicate that rough handling or damage has occurred.

10.9.2 Tilt Indicator Label

10.9.2.1 Purpose

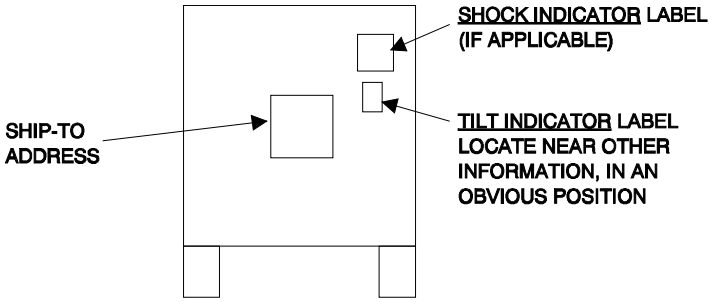
The purpose of the tilt indicator label is to alert people handling a product that it is sensitive to tipping and it must remain upright at all times. It is basically an active "Up Arrow" that changes color if the package is tipped 89 degrees or more from horizontal. These labels can be false activated if tipped less than 89 degrees, and shocked or vibrated at the same time. This event does occur but is considered uncommon. If a package is received with an activated tilt indicator label, there is high degree of certainty it tipped 89 degrees or more from horizontal during shipment.

An activated tilt indicator label does not indicate if the package was simply "Tipped" (laid down with no impact shock) or "Tipped Over" (free fall, with an impact shock). Using both shock indicator labels and tilt indicator labels will help identify if a Tip Over impact shock occurred.

10.9.2.2 Tilt Indicator Label Placement

Any obvious position on a package. However, if a shock indicator label is used, it is recommended that the tilt indicator label be placed close to it. Otherwise, position it close to the packing slip or other shipping information where it will be readily observed.

Tiltwatch Label Placement



It is recommended that the location of Tiltwatch labels be permanently marked on the crate/package to clearly show when they have been removed. This can be done by marking around the label with a permanent marker or any other method that leaves a permanent record.

Tilt indicator labels only activate when tipped side to side, so one label should be placed on the end of a package that can only tip side to side or two labels should be placed on adjacent side and end panels of a package that can be tipped in either direction.

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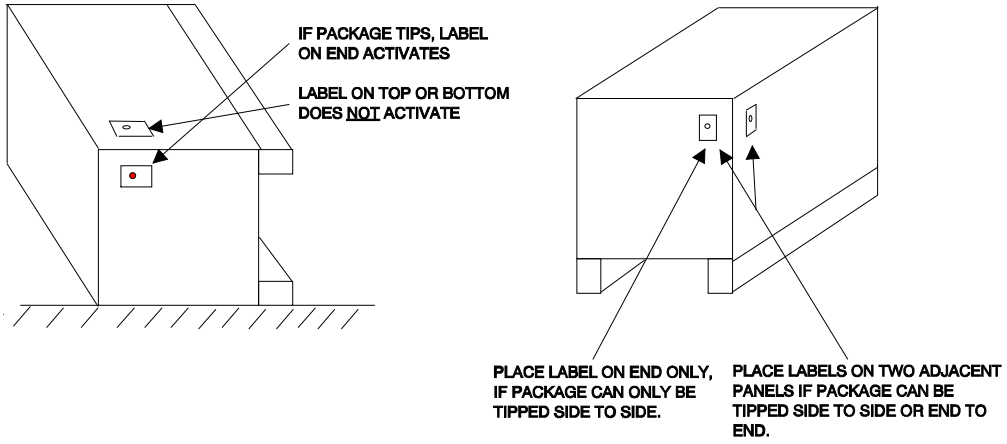
10.9.3 Tiltwatch Label Activation



10.9.3.1 Tilt Indicator Label Proper Usage

Should Be Used For:

- Large, sensitive products in crates that will be damaged if tipped
- Special packages designed specifically to ship upright
- Products secured to wood base, but not supported for vertical positioning
- Items containing oil or other liquids that will spill out if tipped
- Any product that must remain upright to prevent damage

GEHC Examples:

- AMX Mobile units
- CT Gantries & Tables
- MR & CT Computer Cabinets
- MVP & MP Generators
- LP Arm
- Vascular Positioners
- Transformers & Spillable Batteries
- Senographe & Stenoscope

Should **NOT** Be Used For:

- Small packages that are likely to be tipped during shipment
- Durable products that are not susceptible to tipping damage
- Large, flat or odd shaped packages carriers are likely to tip to fit loading patterns
- When the package is designed to protect the product when tipped
- If tipping the package will not cause damage to the product

GEHC Examples:

- Table Tops
- Bridges
- Manuals, Hardware and Other Durable items
- Smaller Service Parts
- Any package shipping Federal Express, Sonic, or other similar express carrier

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10.9.4 Products Received with Activated Tilt Indicator Labels

10.9.4.1 Recommended Procedure

If a package is received with an activated tilt indicator, always accept the shipment. Make note of the activated label or labels on the bill of lading and inspect for visible and hidden damage. An activated label does not mean that damage has occurred; it only means that there is a greater than normal chance that damage has occurred and the product should be inspected more closely than normal for damage.

It is recommended that specific, detailed incoming inspection procedures be established for handling activated tilt indicator labels at each receiving location.

10.9.4.2 Missing Labels

Experience has shown that activated labels are sometimes removed in the distribution system when they are accidentally activated. Incoming inspection should watch for products missing tilt indicator labels that normally have them. If signs of label removal are present, it should be noted on the bill of lading and the product should be inspected to the same criteria as if an activated label were present.

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10.10 Exhibit #10 – Size and Weight Limits for Efficient Distribution and Delivery

10.10.1 Efficient Transport & Delivery

10.10.1.1 Product and Package Height

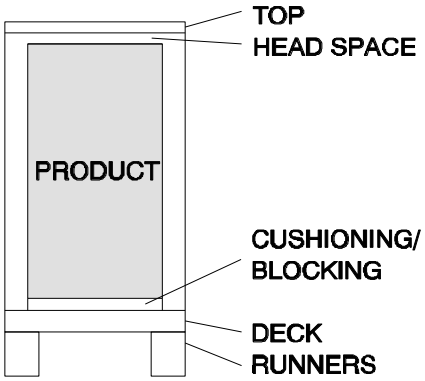
10.10.1.1.1 Estimating Total Shipping Height

The key height dimensions referenced are "Total Shipping Height" which is the height of the product plus the additional height added by the export, shipping crate.

TOTAL SHIPPING HEIGHT = PRODUCT HEIGHT + SHIPPING CRATE ADDITIONS

Use the figure and table below to help estimate total shipping height. Crate designs vary, but the design referenced can be considered very typical.

Typical Export Crate Component Identification



Height Addition For Export Shipping Crate Components

	Standard Height Addition	Minimum Height Addition
Base Runner	10 cm (4.0")	2.5 cm (1.0")
Base Deck	3.8 cm (1.5")	1.9 cm (.75")
Crate Top Assembly	3.8 cm (1.5")	1.0 cm (.38")
Head Space	1.3 cm (.5")	0.33 cm (.13")
Cushioning & Blocking	As Required	As Required
Total Height Addition	19 cm (7.5")**	5.7 cm (2.3")**

** Plus any required cushioning and/or special blocking

Standard Total Shipping Height = Product Height + 19cm (7.5") + Cushioning & Blocking

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Minimum Total Shipping Height = Product Height + 5.7cm (2.3”) + Cushioning & Blocking

Note: To achieve the minimum crate height additions, special base designs and other special design features are required, typically at a much higher cost than a standard export crate. Reducing the height of the base runner below the 10 cm (4”) standard will also result in increased handling problems, extra costs, and delays during worldwide distribution.

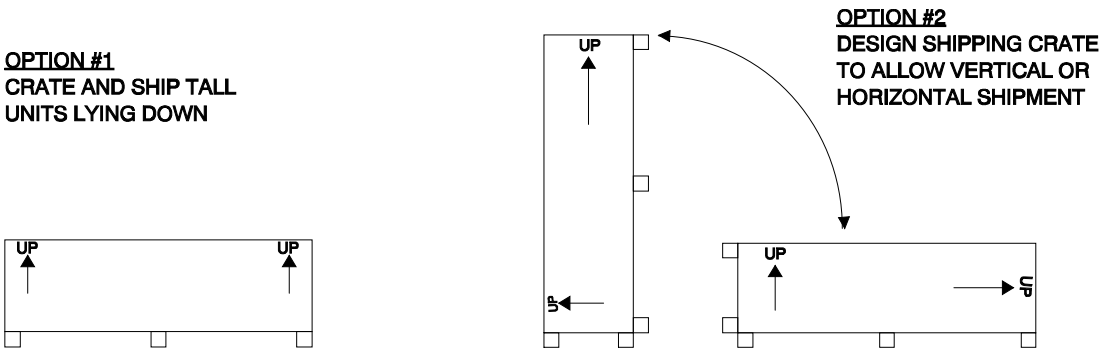
10.10.1.1.2 Height Considerations for Product Design

The Total Shipping Height of a product must be taken into consideration in the design of the product, to minimize total costs and cycle time. The following examples offer guidance on what can be done with the product design to help minimize packaging and distribution costs.

EXAMPLE #1 – TALL PRODUCTS

Taller products, especially those with crated heights over 206 cm (81”), should be structurally designed to allow lying down to reduce height.

Design Product to Allow Tipping



EXAMPLE #2 – GENERAL PRODUCT DESIGN CONSIDERATIONS

Many small design characteristics inadvertently affect the overall size of a product. The following are product design considerations that can help to minimize shipping height and overall size.

1. Make key size limits for shipment and delivery a part of product design criteria. (REF: “*Key Height Limits”* Section 10.10.2.2.1 and *“Summary”* Section 10.10.4)
2. Design products rugged enough so that a cushioned base is not required for shipment. Cushioning on a base adds both height and cost to the base.
3. Avoid extensions from the main product body that increase the height and other dimensions. If these extensions are required, they should be removable for shipment.
4. Products that are designed to rotate or move in some way should be designed to ship at the rotation point that minimizes height and overall shipping cube.

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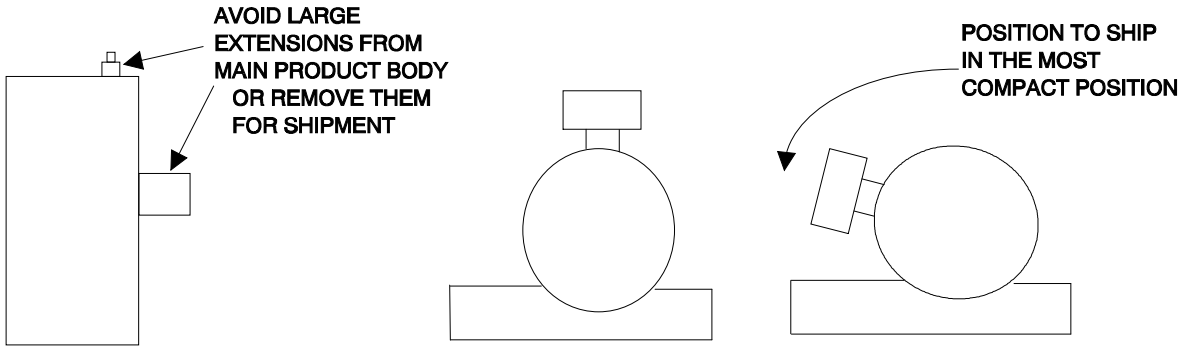
Product Design & Shipping Position To Minimize Height



10.10.1.1.3 Height Considerations for Shipping Crate Design

Many aspects of the shipping crate design affect its overall height. All crates should be designed to minimize height and other dimensions. Any crate that is slightly taller than one of the key height limits should be closely reviewed, to determine if a redesign is possible to reduce the height below the limit point. The following examples provide guidance for minimizing crate height.

EXAMPLE #1

The following items contribute to the overall height of an export shipping crate. The height each adds to the crate must be considered to minimize the total additions.

RUNNER: The global standard is 10 cm (4”), but for special shipments, overall height may take priority, forcing runners to be less than 10 cm (4”) thick.

DECK: Keep as thin as product weight allows

CUSHIONING: Use only if necessary

HEAD SPACE: Hold to minimum necessary

TOP: Design as thin as possible while still maintaining necessary strength

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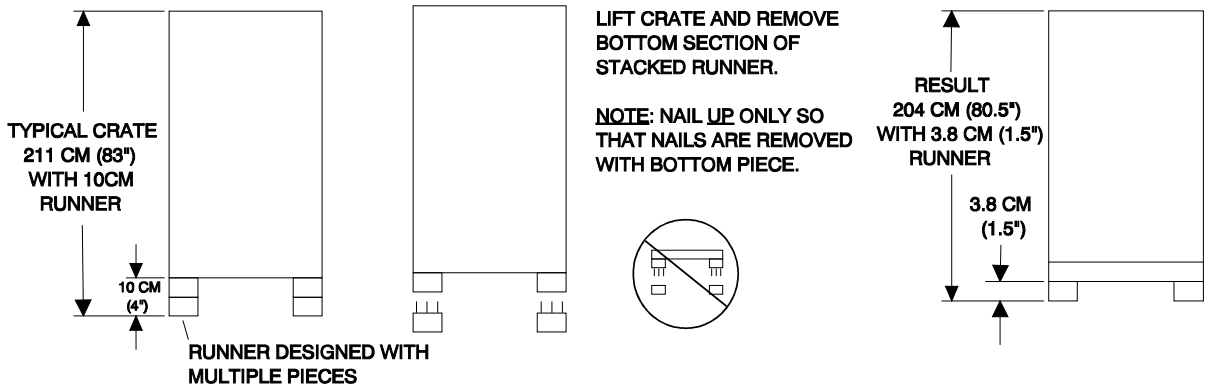
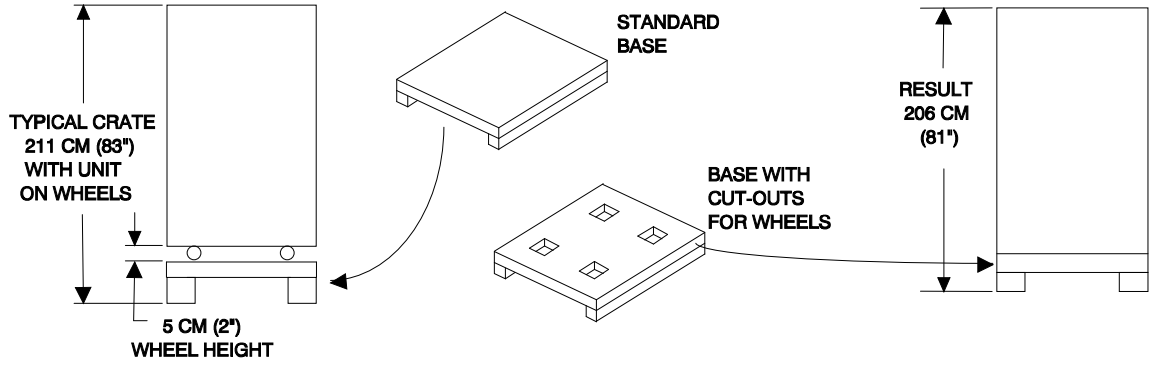
EXAMPLE #2 **Adjustable Base Runner Example**

The base runners can be designed to be adjustable to allow crate height reduction without major crate rework when crate height takes priority over runner height.



EXAMPLE #3 **Special Base For Product On Wheels**

A base supporting a unit on wheels can be designed to allow the wheels to fall into openings in the base deck to reduce the height. Special provisions will be required for loading and unloading and also to protect the wheels from fork truck damage.



10.10.2 Global Transport Size and Weight Limits

10.10.2.1 General

Arrangements can be made to transport products of almost any size and weight to any location in the world. However, exceeding specific size and weight limits reduces carrier selection flexibility and often results in increased transportation costs and slower delivery times.

The size and weight information supplied in this section is typical for global carriers. It is intended to act as a guide to avoid delivery delays and to help minimize costs. It should be used as a design and planning tool but should not be considered exact data for any one carrier or any one specific shipment. Contact the Logistics Specialist in your region for specific information and guidance.

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10.10.2.2 Global Air Shipment

The key limitation factor for air shipment is height. For efficient shipment by air, packages and crates should be held to a maximum of 300cm (118") long X 226cm (89") wide X 206cm (81") tall. A more efficient and sometimes more economical height limit is 160cm (63"). This allows belly loading in all cargo and most passenger aircraft.

The overall height dimension can be increased to 241cm (95") for DC10 and 300cm (118") for 747 cargo aircraft. However, many large markets of the world, including much of Latin America and Asia do not have DC10 or 747 service, so products over 206cm (81") tall cannot be shipped by air to these locations. Products over 300cm (118") tall can NOT be shipped by air.

Air carriers are likely to tip over packages and crates that are over 206cm (81") tall to facilitate loading on smaller aircraft. It is also common practice for air carriers to tip over packages and crates that are over 160cm (63"), to facilitate lower deck loading on passenger and cargo aircraft.

There is no actual weight limitation for cargo aircraft. The limiting factor will be the capacities of available mechanical handling equipment to load and unload the aircraft and the weight limitations of air pallets used. See Section 10.10.2.2.2 for air pallet size and weight limitations.

10.10.2.2.1 Key Height Limits for Efficient Air Transport

Crate height is the key factor for efficient air transport. The following summarizes the key height dimensions that affect cost and cycle time for air transport:

1. **74 cm (29 Inches)** – Most efficient and economical air service.
2. **160 cm (63 Inches)** – Still very good efficiency and economy.
3. **206 cm (81 Inches)** – Point where problems and costs increase greatly.
4. **241 cm (95 Inches)** – 747 cargo aircraft only possible carrier above this height
5. **300 cm (118 Inches)** – Maximum height limit for air transport.

Hold "Total Shipping Heights" below each increasing dimension as product and package height allows.

Note: Aircraft door openings are actually 76.2cm (30"), 162.5cm (64"), 208.2cm (82"), 243.8cm (96") & 302.3cm (119") high. However, crates shall be 2.5 cm (1") less than the opening to allow for thickness of air pallets and other factors associated with aircraft loading.

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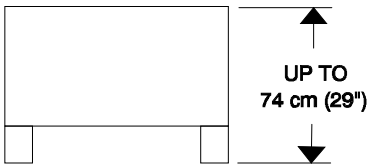
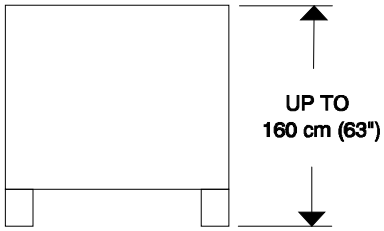
Key Height Limits for Air Transport



BELLY LOADING ALL PASSENGER AIRCRAFT FOR NEXT FLIGHT OUT EMERGENCY SERVICE

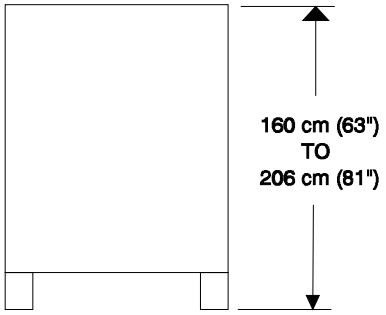
MAXIMUM EFFICIENCY, FLEXIBILITY AND LOWEST COST POTENTIAL

74 CM (29") APPLIES ONLY TO MD 80 AIRCRAFT (AFFECTS 6% OF TOTAL). ALL OTHERS, (94%) CAN USE 79 CM (31").



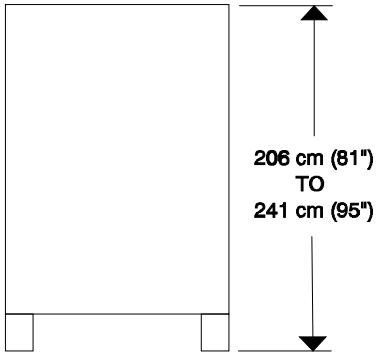
BELLY AND UPPER DECK LOADING ALL CARGO AIRCRAFT AND BELLY LOADING MOST PASSENGER AIRCRAFT

GOOD EFFICIENCY, FLEXIBILITY AND LOW COST POTENTIAL



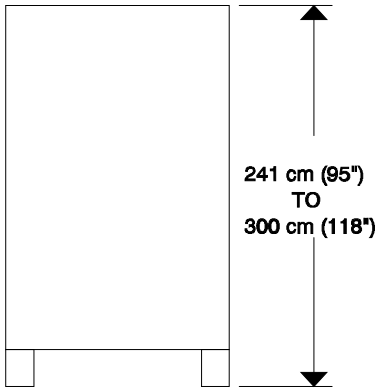
UPPER DECK LOADING ON MOST CARGO AIRCRAFT

REDUCED EFFICIENCY AND FLEXIBILITY. SERVICE LIMITED TO DESTINATIONS WITH CARGO AIRCRAFT SERVICE. SOME DELAYS CAN BE EXPECTED

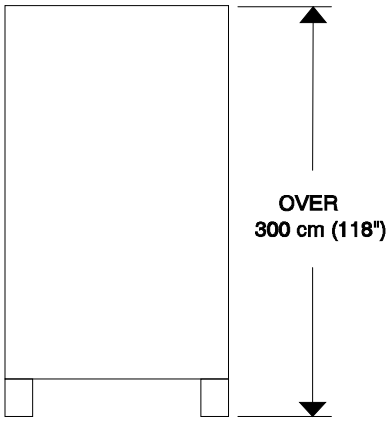


UPPER DECK LOADING ON DC-10 AND 747 CARGO AIRCRAFT ONLY

GREATLY REDUCED EFFICIENCY & FLEXIBILITY AT HIGHER COSTS. LIMITED SERVICE TO MOST DESTINATIONS, WITH NO SERVICE TO SOME DESTINATIONS, INCLUDING MUCH OF LATIN AMERICA AND MANY POINTS IN ASIA. EXPECT DELAYS



VERY RESTRICTED, 747 CARGO ONLY POSSIBLE CARRIER



CAN NOT SHIP AIR. MUST SHIP BY TRUCK OR OCEAN

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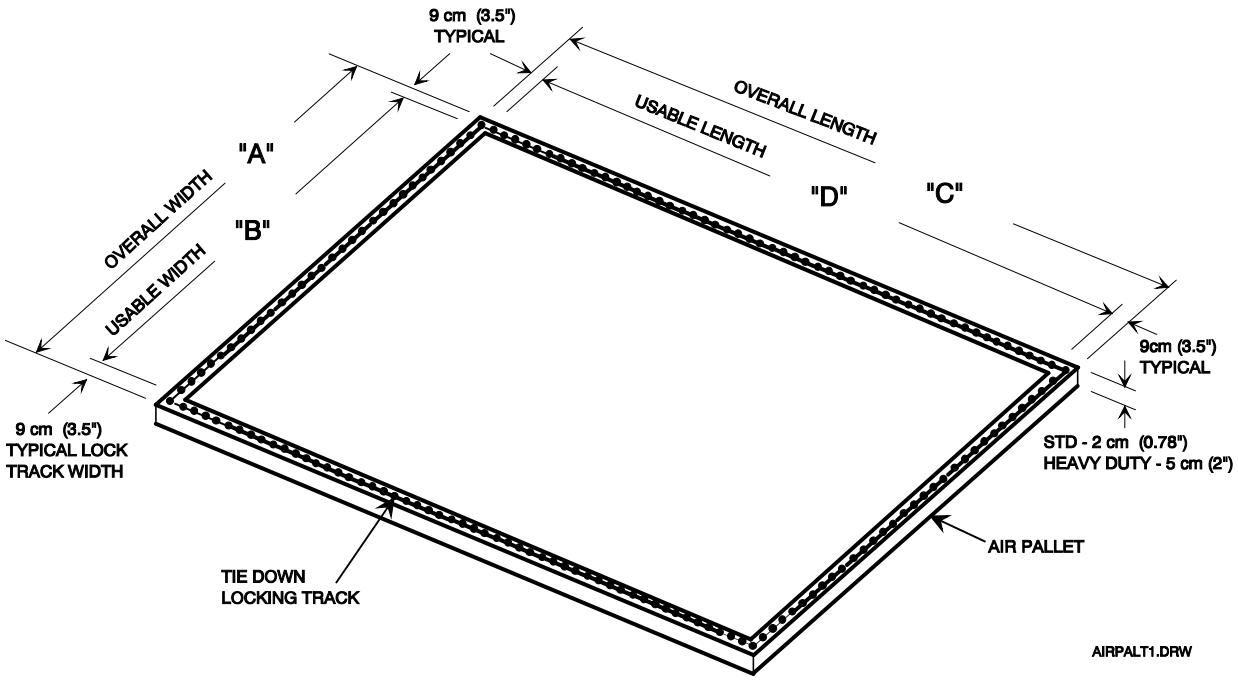
10.10.2.2.2 Large Products on Air Pallets

Large products shipping by air will be secured to an air pallet by the airlines. Specific air pallet specifications and loading requirements are different for each airline. The following information is provided as a general guideline and all dimensions referenced are typical.

10.10.2.2.2.1 Air Pallet Specifications

Typical Air Pallet Specifications



Usable Air Pallet Load Area and Maximum Weight

PALLET TYPE	"A"	"B"	"C"	"D"	Max Weight
3 m (10') Pallet	243.8cm (96")	226cm (89.0")	317.5cm (125")	300cm (118.0")	6,668 kg (14,700 lbs.)
6 m (20') Pallet	243.8cm (96")	226cm (89.0")	605.8cm (238.5")	588cm (231.5")	10,795 kg (23,800 lbs.)

Air Pallet Loading Weight Distribution

PALLET TYPE	Max Pallet Loading
STD 2cm (0.78") Thick	1465kg/Sq. m (300 Lbs./Sq. Ft.)
Heavy Duty 5cm (2.0") Thick	4882.7kg/Sq. m (1000 Lbs./Sq. Ft.)

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10.10.2.2.2.2 Air Pallet Loading and Securement

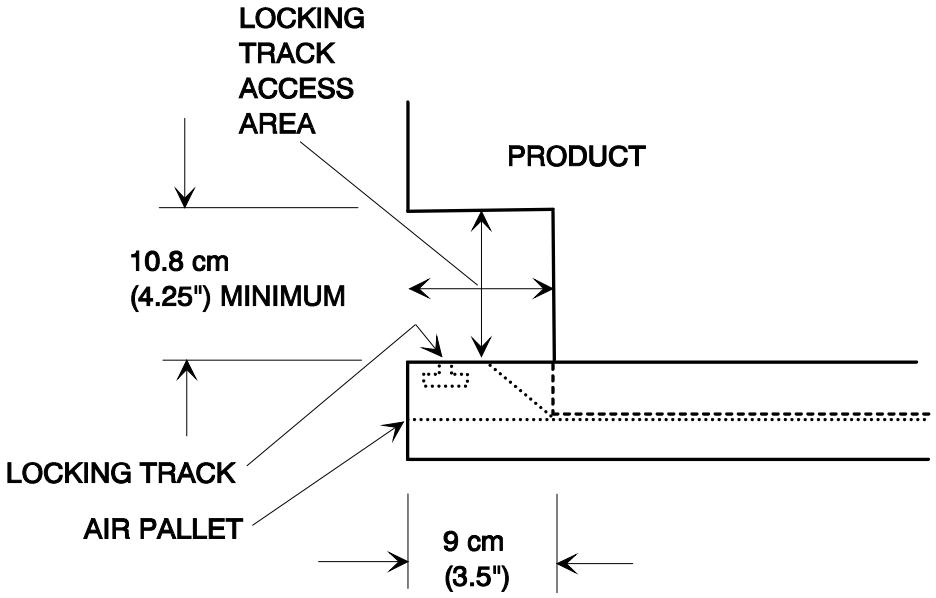
The air pallet will be locked to the floor of the aircraft cargo bay, so it is critical that the product(s) are adequately secured to the pallet to prevent all horizontal and vertical movement. The following are typical requirements of all airlines:

1. Product weight must be distributed as evenly as possible on the air pallet.
2. Products on wheels shall be blocked or supported in some manner to prevent rolling.
3. Large products must be secured both at the base and over the top.
4. Base straps are angled in opposite directions to eliminate all horizontal movement.
5. Top straps are used to eliminate vertical movement. Top straps can also be angled to help eliminate horizontal movement.
6. Tie-down straps are typically 5 cm (2”) wide and are tensioned and secured with clamp type ratchet assemblies.
7. Tie-down straps are secured to the air pallet with devices that attach to a locking track on the edge of the air pallet.
8. Products must be positioned to allow access to the locking track along the edge of the air pallet.
9. Products on the pallet will be covered with plastic sheeting for moisture protection.
10. The number of base and top straps is dependent on the weight of the product(s) and varies by airline.
11. Most airlines require that a cargo net be applied over the load after the straps and plastic shroud are in position.
12. The cargo net is secured to the same locking track on the air pallet as the straps.
13. Straps and cargo nets are tensioned manually, so the tension forces applied to the product are totally dependent on the person doing the work.

10.10.2.2.2.3 Air Pallet Locking Track Access

Allow access to the locking track when positioning products on an air pallet. Products can be extended to the edge of the air pallet, if an access area is provided over the locking track.

Air Pallet Locking Track Access Requirements



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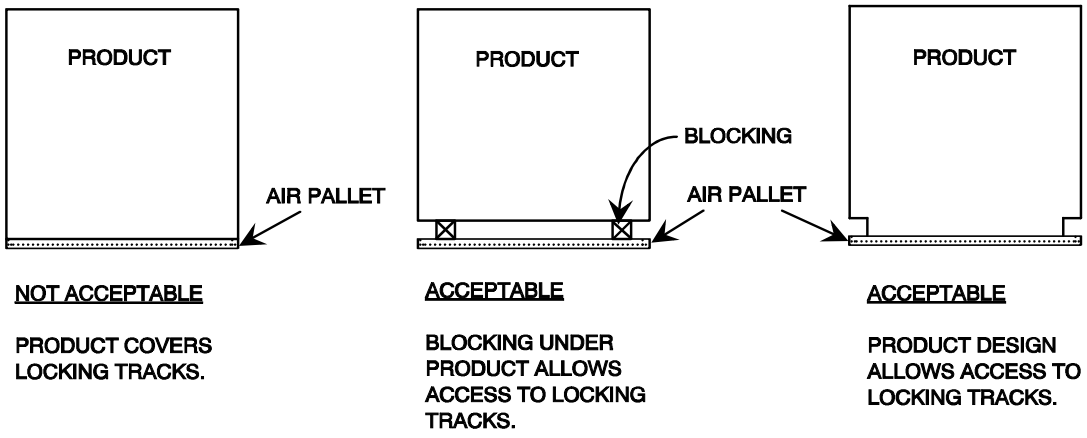
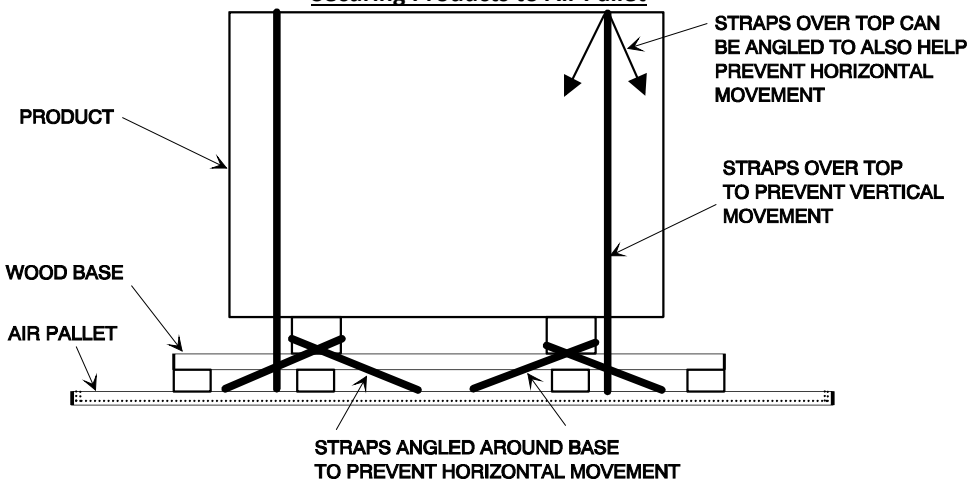
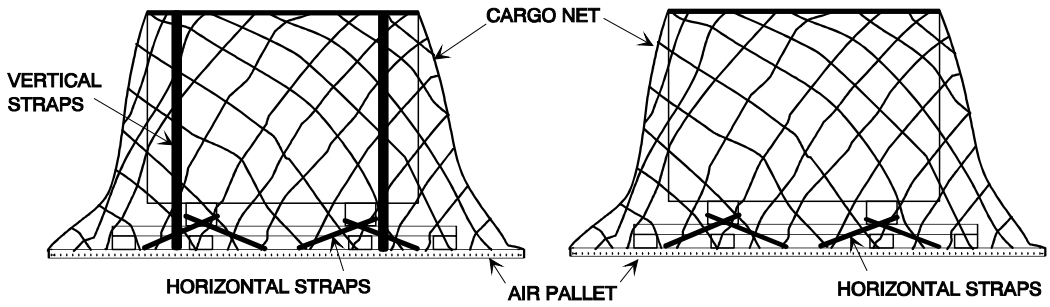
Typical Air Pallet Locking Track Access Examples



10.10.2.2.2.4 Air Pallet Securement

Securing Products to Air Pallet





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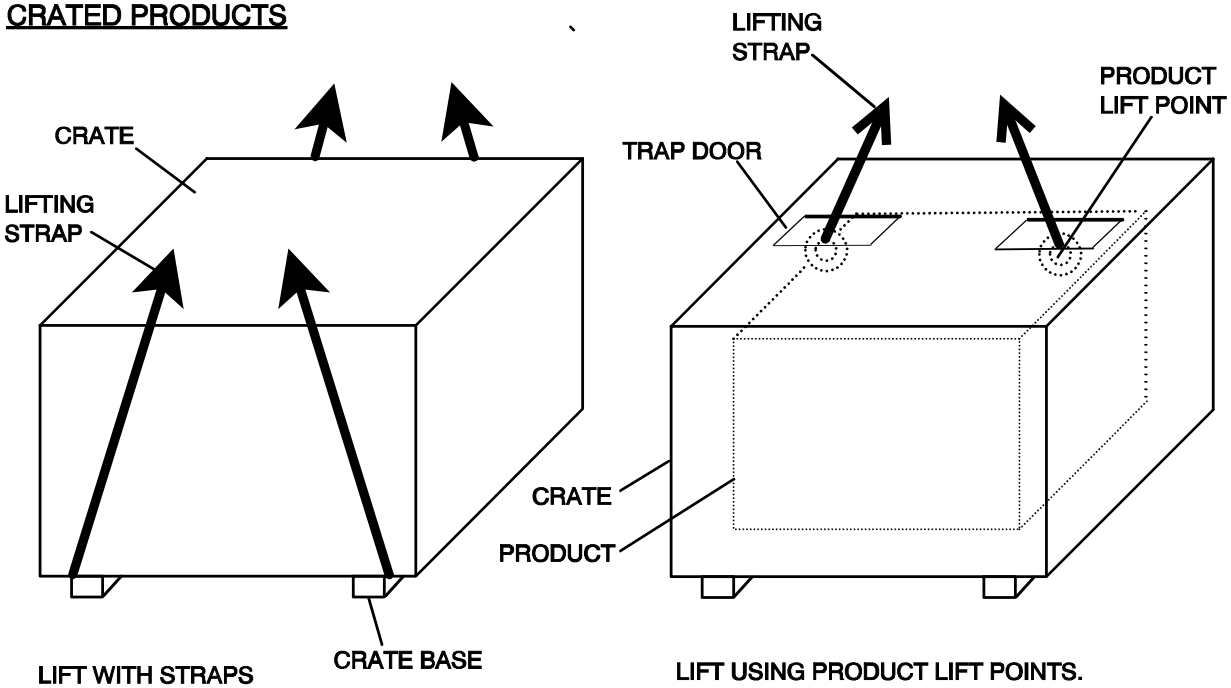
10.10.2.2.2.5 Crane Lifting for Large Products

Crane Lifting Crated and Uncrated Products

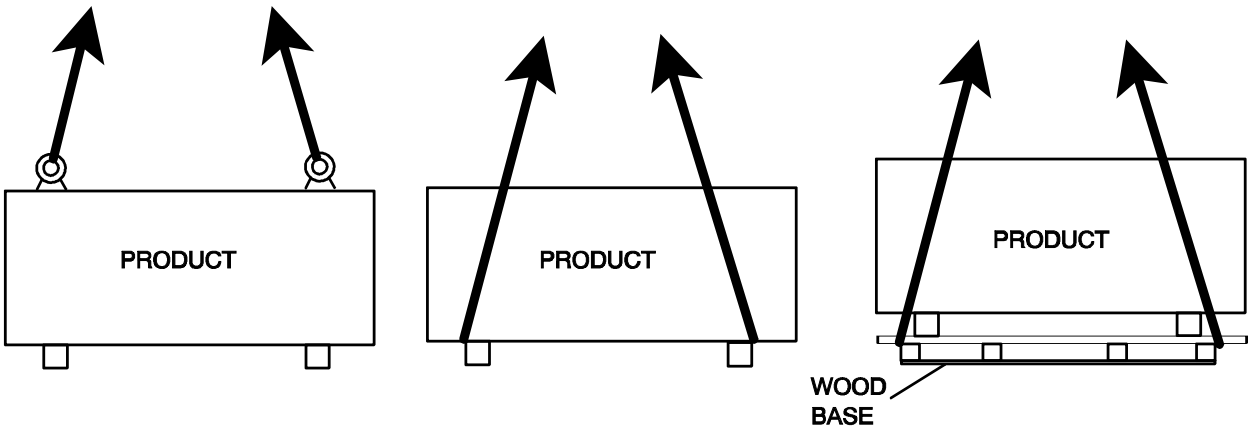
CRATED PRODUCTS



LIFT WITH STRAPS UNDER CRATE BASE

LIFT USING PRODUCT LIFT POINTS. TRAP DOORS ON TOP OF CRATE ALLOW ACCESS TO PRODUCT.

CRATELESS PRODUCTS



LIFT USING PRODUCT LIFT POINTS.

LIFT WITH STRAPS UNDER PRODUCT.

SECURE PRODUCT TO WOOD BASE AND LIFT WITH STRAPS UNDER WOOD BASE.

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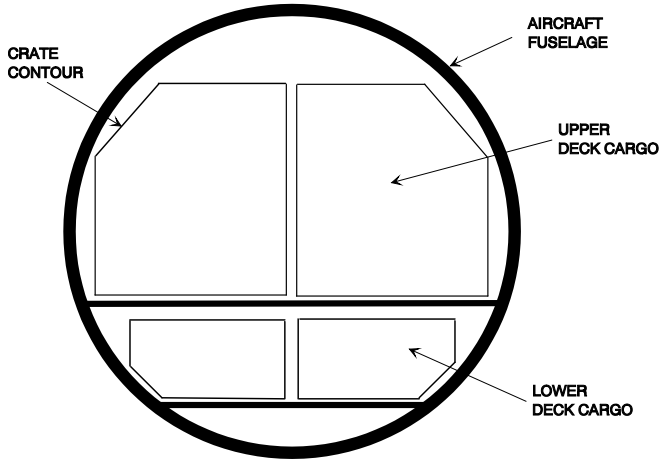
10.10.2.2.3 Matching Large Crates and Loads to Aircraft Contours

Due to the cylindrical shape of an aircraft fuselage, large crates and pallet loads with heights close to the maximum height limit often require a contour to match the aircraft. The following figure shows how contoured freight is positioned in upper and lower deck compartments.

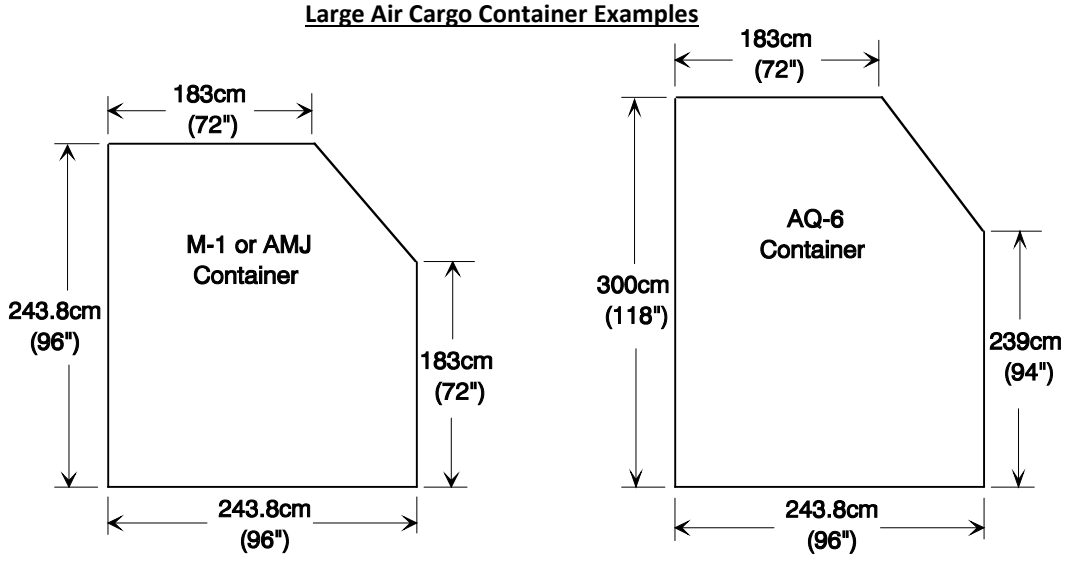
Freight Contoured to Fit Aircraft Fuselage



The maximum dimensions and contour requirements for both upper and lower deck shipments vary greatly by carrier, aircraft type and position on the aircraft.

Air cargo containers provide good examples of maximum size and contour dimensions. The figure below provides typical examples of large cargo containers. Note: These should not be considered exact dimensions for any specific shipment. It is highly recommended that anyone with products in these size ranges, consult with your Logistics Department for specific information.

Large Air Cargo Container Examples



MD11, DC10 & 747 Aircraft

747 Aircraft Only

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10.10.2.3 Global OCEAN Shipment

10.10.2.3.1 General

Products shipping by ocean are typically loaded in Standard Containers (solid top & open top), Flat Rack Containers, and Non-containerized wood crates. Standard containers can be loaded below or on the deck of the vessel. Flat rack containers are typically loaded above deck. Non-containerized wood crates are almost always loaded above deck.

10.10.2.3.2 Containerized Shipments

10.10.2.3.2.1 Closed Container

Most ocean shipments use standardized containers that are either 12.2m (40 ft) or 6.1m (20 ft) in length.

Typical inside dimensions for a 12.2m (40 ft) container are 12 m (39 ft, 6 in) long X 2.3m (7 ft, 7 in) wide X 2.36m (7 ft, 9 in) high.

There are also high cube containers that are 2.7m (8 ft, 10 in) high, but their availability is very limited.

Typical inside dimensions for a 6.1 m (20 ft) container are 5.9m (19 ft, 4 in) long X 2.3m (7 ft, 7 in) wide X 2.36m (7 ft, 9 in) high.

High cube containers are not available in the 6.1m (20 ft) length.

10.10.2.3.2.2 Flat Rack Container

A flat rack is an open, “U” shaped vehicle, with a bulkhead at each end. These containers are also, either 12.2 m (40 ft), or 6.1 m (20 ft) in length.

Typical maximum product dimensions for a 12.2m (40 ft) container are 11.8m (38 ft, 9 in) X 2.148 m (7ft) X 2.095m (6 ft, 10.5 in).

Typical maximum product dimensions for a 6.1m (20 ft) container are 5.7m (18 ft, 8.5 in) X 2.438m (8 ft) X 2.327m (7 ft, 7.5 in).

The flat rack container is open on the sides and top, so the width and height of the product can be greater than the standard maximum dimensions. However, costs increase when the product size exceeds the standard maximum dimensions and cycle time may be affected.

10.10.2.3.3 Non-containerized Shipments

Products in wood crates that are too large for standard containers, or flat racks, can also be shipped by ocean through special arrangements with the forwarder/carrier. These shipments will require special handling and securement on the deck of the ocean vessel. This space is limited, so costs will be higher and cycle time may be affected.

10.10.2.3.4 Weight Limitations

Weight limitations for closed containers are determined by the limitations of the surface movement in the exporting and importing countries.

Weight limitations for flat rack containers are determined by the maximum payload allowed for the container during the ocean voyage. Products are typically transferred between flatbed trucks and the flat rack containers at the port, so highway transport limits do not apply.

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10.10.2.3.4.1 Typical Weight Limits for Closed Container Surface Movement in the United States

6.1m (20 ft.) Closed Container (Note: Average Container Weight = 2,041 kg (4500 lbs.))

	Maximum Gross Weight	Maximum Net Weight
- Standard Chassis	17,797 kg (39,235 lbs.)	15,755 kg (34,735 lbs.)
- Tri-axle Chassis	21,773 kg (48,000 lbs.)	19,732 kg (43,500 lbs.)

12.2m (40 ft.) Closed Container (Note: Average Container Weight = 3,856 kg (8500 lbs.))

	Maximum Gross Weight	Maximum Net Weight
- Standard Chassis	17,797 kg (39,235 lbs.)	13,941 kg (30,735 lbs.)
- Tri-axle Chassis	21,773 kg (48,000 lbs.)	17,917 kg (39,500 lbs.)

10.10.2.3.4.2 Typical weight limits for flat rack containers

6.1m (20 ft.) Flat Rack Container

- Average Container Weight = 2,330 kg (5,137 lbs.)
- Max Payload Weight = 21,670 kg (47,773 lbs.)

12.2m (40 ft.) Flat Rack Container

- Average Container Weight = 5,260 kg (11,596 lbs.)
- Max Payload Weight = 25,220 kg (55,600 lbs.)

10.10.3 Region & Country Specific Transport & Delivery Size and Weight Limits

10.10.3.1 GEHC-AMERICAS

10.10.3.1.1 **Domestic Shipment (U.S.A. & Canada)**

10.10.3.1.1.1 Van

Size limitations for U.S. Van shipments are 15.5 m (51ft) long X 2.5 m (98”) wide X 2.8 m (110”) tall. The typical weight limit is 18,000 kg (40,000 lb.). This is the weight limit of the Van but does not take into account weight limits of mechanical handling equipment used to load and unload the van.

10.10.3.1.1.2 Flatbed

The key size consideration for flatbed trailer shipment is a maximum width of 300cm (118”). The key weight consideration is 21,773kg (48,000 lbs.). Larger loads require special permits.

The next key size consideration is a maximum width of 365cm (144”) and a maximum height of 365cm (144”). Larger loads are classified as “Super Loads,” and require additional permits and escorts.

Larger and heavier loads can be transported, but due to the requirements for special permits and other transport restrictions, it will be at a much higher cost and slower cycle time.

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10.10.3.1.2 **Domestic Delivery Limitations (U.S.A. & Canada)**

The recommended size limitations (which include clearances) for U.S. site deliveries that will fit most standard doorways and elevators are 259 cm (102”) long X 105 cm (41.5”) wide X 202 cm (79.5”) tall. The most efficient size limitation that will fit all standard doorways and elevators is 236 cm (93”) long X 90 cm (35.5”) wide X 202 cm (79.5”) tall. The maximum size limitation that will only fit the largest known doorways and elevators is 297 cm (117”) long X 121 cm (47.5”) wide X 212 cm (83.5”) tall. Special handling and rigging will probably be required for delivery of these large products.

The weight limitation for U.S. deliveries is determined by the elevator capacity.

10.10.3.1.3 **Hospital/Clinic Facility Data (U.S.A. & Canada)**

Note: The following data is typical for medical facilities in the U.S. It should not be considered exact data for any particular customer site. Percentages referenced are estimates.

10.10.3.1.3.1 Door Widths (Actual clear opening in door)
Standard – 106 cm (42”) 80%
- 121 cm (48”) 10%
Some clinics and older hospitals – 91 cm (36”) to 106 cm (42”) 10%
(**Note:** Subtract 1.3 cm (.5”) from opening dimension for clearance to move through doorway)

10.10.3.1.3.2 Door Heights (Actual clear opening in door)
Standard – 203 cm (80”) 90%
- 213 cm (84”) 10%
(**Note:** Subtract 1.3 cm (.5”) from opening dimension for clearance to move through doorway)

10.10.3.1.3.3 Corridors
Standard 152 cm (60”) to 243 cm (96”)

10.10.3.1.3.4 Elevator Door Heights (Actual clear opening in door)
Standard – 203 cm (80”) 98%
- 213 cm (84”) 2%
(**Note:** Subtract 1.3 cm (.5”) from opening dimension for clearance to move through doorway)

10.10.3.1.3.5 Elevator Depths
Standard depths are – 243 cm (96”) 10%
- 266 cm (105”) 80%
- 304 cm (120”) 10%
(**Note:** Subtract 7.6cm (3”) from dimension for clearance to move product in elevator)

10.10.3.1.3.6 Elevator Weight Limit
Typically 2040 kg (4500 lb.)

10.10.3.2 **GEHC-EMEA**

10.10.3.2.1 **Domestic Shipment**

10.10.3.2.1.1 Van
The typical size limitations for Van shipments in Europe are 240 cm (94.5”) to 244 cm (96”) wide X 250 cm (98.5”) tall. The typical weight limit is 18,000 kg (40,000 lb.). This is the weight limit of the Van but does not take into account weight limits of mechanical handling equipment used to load and unload the Van.

10.10.3.2.1.2 Flatbed
The key size consideration for flatbed trailer shipment is a maximum width of 2.5m (98.4”). Larger loads require special permits and escorts.

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10.10.3.2.2 **Domestic Delivery Limitations**

The recommended size limitations (which include clearances) for GEHC-E site deliveries that will fit most standard doorways and elevators are 236 cm (92.9”) long X 120 cm (47.2”) wide X 195 cm (76.8”) tall. The maximum size limitation that will fit only the largest known doorways and elevators is 150 cm (59”) wide X 212 cm (83.5”) tall. Special handling and rigging will probably be required for delivery of these large products.

The weight limitation for GEHC-E deliveries is determined by the elevator capacity.

10.10.3.2.3 **Hospital/Clinic Facility Data**

Note: The following data is typical for medical facilities in EMEA. It should not be considered exact data for any particular customer site.

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	Door Width			Door Height			Corridor	Elevator Door Height	Elevator Depth		Elevator Weight Limit	
Country	Private Clinic	Clinic	Hospital	Private Clinic	Clinic	Hospital	Standard	Majority	Private Clinic	Majority Clinics & Hospitals	Private Clinic	Majority Clinics & Hospitals
France	90 cm (35.4")	120 cm (47.2")	140 cm (55.1")	202 cm (79.5")	202 cm (79.5")	212 cm (83.5")	150 cm (59") to 200 cm (78")	1.95m (76.8")	2.36 m (92.9")	2.36 m (92.9")	1500kg (3307 lb)	1500kg (3307 lb)
Germany	90 cm (35.4")	120 cm (47.2")	120 cm (47.2")	198 cm (78")	198 cm (78")	198 cm (78")	170 cm (67") to 200 cm (78")	1.95m (76.8")	1.8 m (70.9")	2.36 m (92.9")	1300kg (2866 lb)	1800 kg (4000 lb)
UK	82 cm (32") To 164 cm (64")	82 cm (32") To 164 cm (64")	82 cm (32") To 164 cm (64")	203 cm (80")	203 cm (80")	203 cm (80")	200 cm (78.7")	1.95m (76.8")	2.36 m (92.9")	2.36 m (92.9")	1800 kg (4000 lb)	1800 kg (4000 lb)
Spain	90 cm (35.4")	120 cm (47.2")	140 cm (55.1")	202 cm (79.5")	202 cm (79.5")	212 cm (83.5")	150 cm (59") to 170 cm (67")	1.95m (76.8")	2.36 m (92.9")	2.36 m (92.9")	1800 kg (4000 lb)	1800 kg (4000 lb)
Belgium	90 cm (35.4")	120 cm (47.2")	120 cm (47.2")	200 cm (78.7")	200 cm (78.7")	200 cm (78.7")	170 cm (67") to 200 cm (78")	200 cm (78.7")	2.36 m (92.9")	2.36 m (92.9")	1500kg (3307 lb) to 1800 kg (4000 lb)	1500kg (3307 lb) to 1800 kg (4000 lb)
Turkey	90 cm (35.4")	120 cm (47.2")	140 cm (55.1")	202 cm (79.5")	202 cm (79.5")	212 cm (83.5")	170 cm (67") to 200 cm (78")	200 cm (78.7")	2.36 m (92.9")	2.36 m (92.9")	1800 kg (4000 lb)	1800 kg (4000 lb)
Russia	110 cm (43.3)	120 cm (47.2")	120 cm (47.2")	198 cm (78")	198 cm (78")	202 cm (79.5")	180 cm (70.9") to 220 cm (86.6")	1.95m (76.8")	2.36 m (92.9")	2.36 m (92.9")	1.35m (53.2")	450 kg (992 lb)
Nigeria	120 cm (47.2") to 150 cm (59")	120 cm (47.2") to 150 cm (59")	120 cm (47.2") to 150 cm (59")	202 cm (79.5")	202 cm (79.5")	212 cm (83.5")	170 cm (67") to 200 cm (78")	1.95m (76.8")	2.36 m (92.9")	2.36 m (92.9")	1800 kg (4000 lb)	1800 kg (4000 lb)
Netherlands	90 cm (35.4")	110 cm (43.3") to 120 cm (47.2")	110 cm (43.3") to 120 cm (47.2")	200 cm (78.7") to 220 cm (86.6")	200 cm (78.7") to 220 cm (86.6")	200 cm (78.7") to 220 cm (86.6")	240 cm (94.5")	1.95m (76.8")	2.36 m (92.9")	2.36 m (92.9")	1100kg (2425 lb) to 2400 kg (5291 lb)	1100kg (2425 lb) to 2400 kg (5291 lb)
Switzerland	90 cm (35.4")	120 cm (47.2")	120 cm (47.2")	200 cm (78.7")	200 cm (78.7")	207 cm (81.5")	150 cm (59") to 250 cm (98.4")	1.95m (76.8")	210 cm (82.7") to 2.36 m (92.9")	210 cm (82.7") to 2.36 m (92.9")	650kg (1433 lb) to 1600 kg (3527 lb)	1600kg (3527 lb) to 2000 kg (4409 lb)
Hungary	90 cm (35.4")	120 cm (47.2")	140 cm (55.1")	202 cm (79.5")	202 cm (79.5")	212 cm (83.5")	170 cm (67") to 200 cm (78")	1.95m (76.8")	2.36 m (92.9")	2.36 m (92.9")	1000kg (2205 lb) to 1600 kg (3527 lb)	1000kg (2205 lb) to 1600 kg (3527 lb)
Greece	80 cm (31.5")	110 cm (43.3")	120 cm (47.2")	205 cm (80.7")	205 cm (80.7")	205 cm (80.7")	120 cm (47.2")	1.95m (76.8")	1.35m (53.2")	1.35m (53.2")	750 kg (1653 lb)	750 kg (1653 lb)

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10.10.3.3 **GE-YMS (JAPAN)**

10.10.3.3.1 **Domestic Shipment**

Size limitations for truck shipments in Japan are as follows:

Type of Truck	Weight Limit	Floor Size	Door Opening Size
Crane Lift Truck	4,000 kg (8,800lb.)	510cm X 208cm (200.8" X 81.9")	Open Truck, No Door
Wing Truck	4,000 kg (8,800lb.)	620cm X 208cm (244" X 81.9")	Open Truck, No Door
Flat Bed Truck	10,000kg (22,000lb.)	930cm X 230cm (366.1" X 90.5")	Open Truck, No Door
Gate Truck	2,000 kg (4,400lb.)	480cm X 190cm (189" X 74.8")	180cm X 180cm (70.9" X 70.9")

10.10.3.3.2 **Domestic Delivery Limitations**

The recommended size limitations for Japan site deliveries that will fit most standard doorways and elevators are 250 cm (98.4") long X 115 cm (45.3") wide X 198 cm (78") tall. The most efficient size limitations that will fit older facilities in Japan are 250 cm (98.4") long X 85 cm (33.5") wide X 176 cm (69") tall. Special handling and rigging will probably be required for delivery of larger products to these older facilities.

The weight limitation for GE-YMS deliveries is determined by the elevator capacity.

10.10.3.3.3 **Hospital/Clinic Facility Data**

Note: The following data is typical for medical facilities in Japan. It should not be considered exact data for any particular customer site.

10.10.3.3.3.1 Door Widths
Entrance of Operation Room – 85 cm (33.5")
Entrance of Scan Room – 115 cm (45.3")

10.10.3.3.3.2 Door Heights
Older Hospitals - 176 cm (69") 10%
Newer Hospitals – 198 cm (78") 90%

10.10.3.3.3.3 Corridors
Small Hospital – 90 cm (35.5")
Medium Hospital – 120 cm (47.25")
Large Hospital – 250 cm (98.4")

10.10.3.3.3.4 Elevator Door Heights
Standard 210 cm (82.5")

10.10.3.3.3.5 Elevator Door Widths
Standard 120 cm (47.25")

10.10.3.3.3.6 Elevator Depths
Standard depths are 250 cm (98.4")

10.10.3.3.3.7 Elevator Weight Limit
Typically 750 kg (1650 lb.) to 1000 kg (2200 lb.)

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10.10.3.4 **China**

10.10.3.4.1 **Hospital/Clinic Facility Data**

Note: The following data comes from limited information collected for facilities in China. It is not complete and is not exact data for any particular customer site.

10.10.3.4.1.1 Door Widths
Minimum – 90 cm (35.4”)
Maximum – 120 cm (47.2”)

10.10.3.4.1.2 Elevator Door Widths
Minimum – 90cm (35.4”)
Maximum – 150cm (59”)
Most Common – 110cm (43.3)

10.10.3.4.1.3 Elevator Depths
Minimum – 180cm (71”)
Maximum – 250cm (98.4”)

10.10.4 Summary – Size & Weight Limitations for Efficient Handling & Distribution

NOTE: This data is typical for carriers and customer facilities worldwide. It is intended to act as a guide to help minimize costs and delays. It should not be considered exact data for any one shipment to any particular customer site. Percentages referenced indicate the estimated percentage of facilities with that size limitation. For example, the Width Limit of 105cm (41.5”) shown as 80% for the Americas indicates that an estimated 80% of facilities in the Americas have a width limit of 105cm (41.5”).

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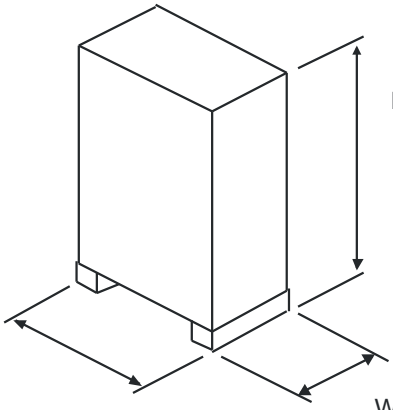
ENGINEERING **SPECIFICATION**
CONTROLLED BY APPLIED PRACTICES AND STANDARDS

WORLD WIDE AIR TRANSPORT



HEIGHT

KEY HEIGHT LIMITS
(Ref: Section 6.1)

74 cm (29")
160 cm (63")
206 cm (81")
241 cm (95")
300 cm (118")

LENGTH

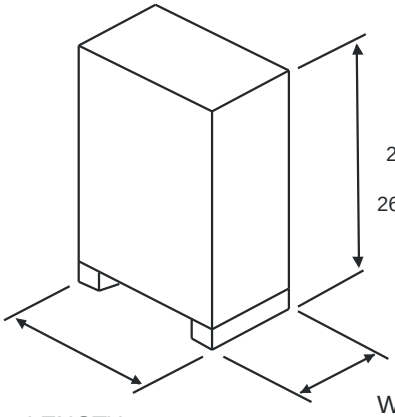
302 cm (119")

WIDTH

223 cm (88")

WEIGHT
Limited by the capacities of available handling equipment.

WORLD WIDE OCEAN TRANSPORT



HEIGHT

236 cm (93")

269 cm (106") Limited Availability

LENGTH

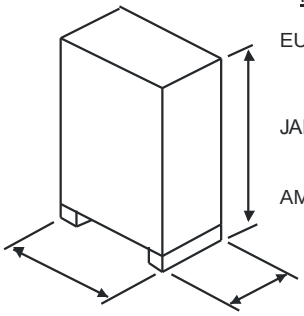
12 m (474")
&
5.9 m (232")

WIDTH

231 cm (91")

WEIGHT
Limited by the capacities of available handling equipment.

CUSTOMER DELIVERY - BY POLE



HEIGHT

EUROPE - 195cm (76.8") Elevator Door
- 202cm (79.5") Clinic Door
- 212cm (83.5") Hospital Door

JAPAN - 176cm (69") 10%
- 198cm (78") 90%

AMERICAS - 202cm (79.5") 98%
212cm (83.5") 2%

LENGTH (Elevator Depths)

EUROPE - 236cm (92.9")

JAPAN - 250cm (98.4")

AMERICAS - 236cm (93") 10%
- 259cm (102") 80%
- 297cm (117") 10%

WIDTH

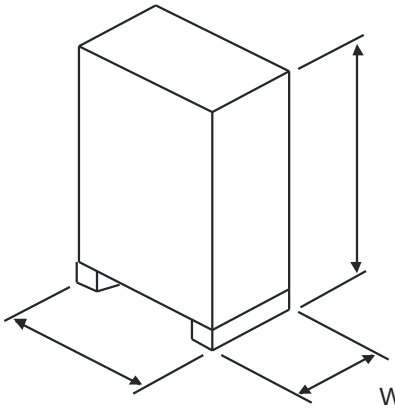
EUROPE - 90cm (35.4") Private
- 120cm (47.2") Clinic
- 140cm (55.1") Hospital

JAPAN - 85cm (33.5") 10%
- 115cm (45") 90%

AMERICAS - 90cm (35.5") 10%
- 105cm (41.5") 80%
- 121cm (47.5") 10%

WEIGHT
EUROPE - 1,800kg (4,000 LBS)
JAPAN - 750kg (1,650 LBS) 30%
- 1,000kg (2,200 LBS) 70%
AMERICAS - 1,800kg (4,000 LBS)

TRUCK / VAN - BY POLE



HEIGHT

EUROPE - 250cm (98.5")

JAPAN - 180cm (70.9") VAN
- NO LIMIT OPEN

AMERICAS - 280cm (110")

LENGTH

EUROPE -

JAPAN - 480cm (189") VAN
- 620cm (244") OPEN

AMERICAS - 15.5m (612")

WIDTH

EUROPE - 240cm (94.5")
- 244cm (96.0")

JAPAN - 180cm (70.9") VAN
- 208cm (81.9") OPEN

AMERICAS - 2.5m (98")

WEIGHT
EUROPE - 18,000kg (40,000 LBS)
JAPAN - 2,000kg (4,400 LBS) VAN
- 4,000kg (8,800 LBS) OPEN
AMERICAS - 18,000kg (40,000 LBS)

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GE Healthcare Milwaukee, Wisconsin, USA		Document Number **2100268PRE**	Revision **25**	Sheet **119 of 187**

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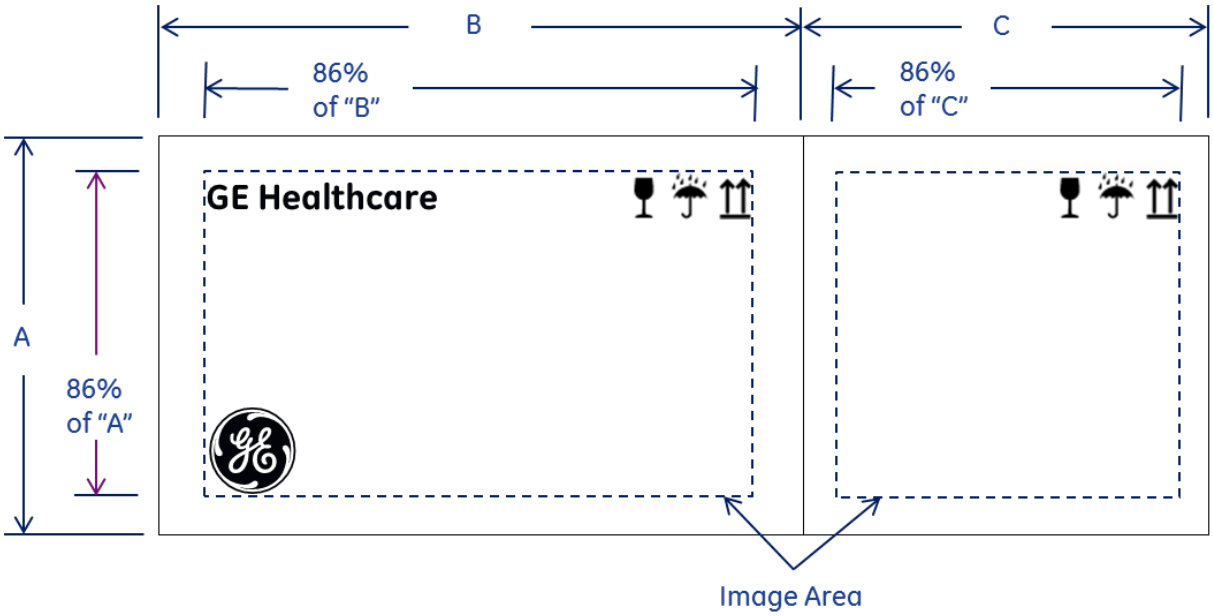
10.11 Exhibit #11 – Artwork Layouts for GE Logo Graphics

Long Box Example



1. Graphics should fit into an image area that is 86% of the box panel dimensions
2. Maintain a left margin with GE monogram & GE Healthcare
3. GE monogram to be 24% of height of image area
4. GE Healthcare should be 1/3 the height of monogram
5. Hazard symbols should 2/3 the height of monogram and right aligned in uppermost image area
6. GE Healthcare should be centered with height of symbols
7. Use Master Artwork for correct proportions

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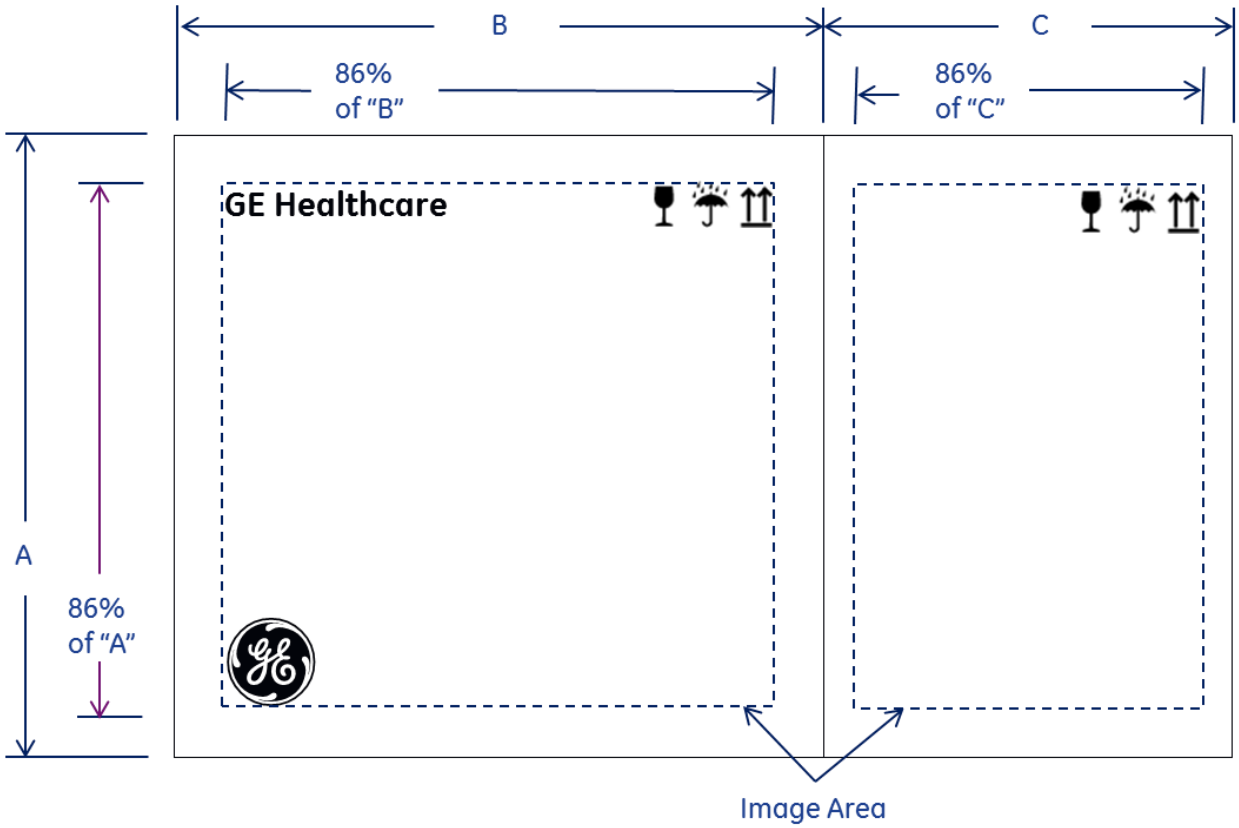
Square Box Example



1. Graphics should fit into an image area that is 86% of the box panel dimensions
2. Maintain a left margin with GE monogram & GE Healthcare
3. GE monogram to be 14% of height of image area
4. GE Healthcare should be 1/3 the height of monogram
5. Hazard symbols should 2/3 the height of monogram and right aligned in uppermost image area
6. GE Healthcare should be centered with height of symbols
7. Use Master Artwork for correct proportions

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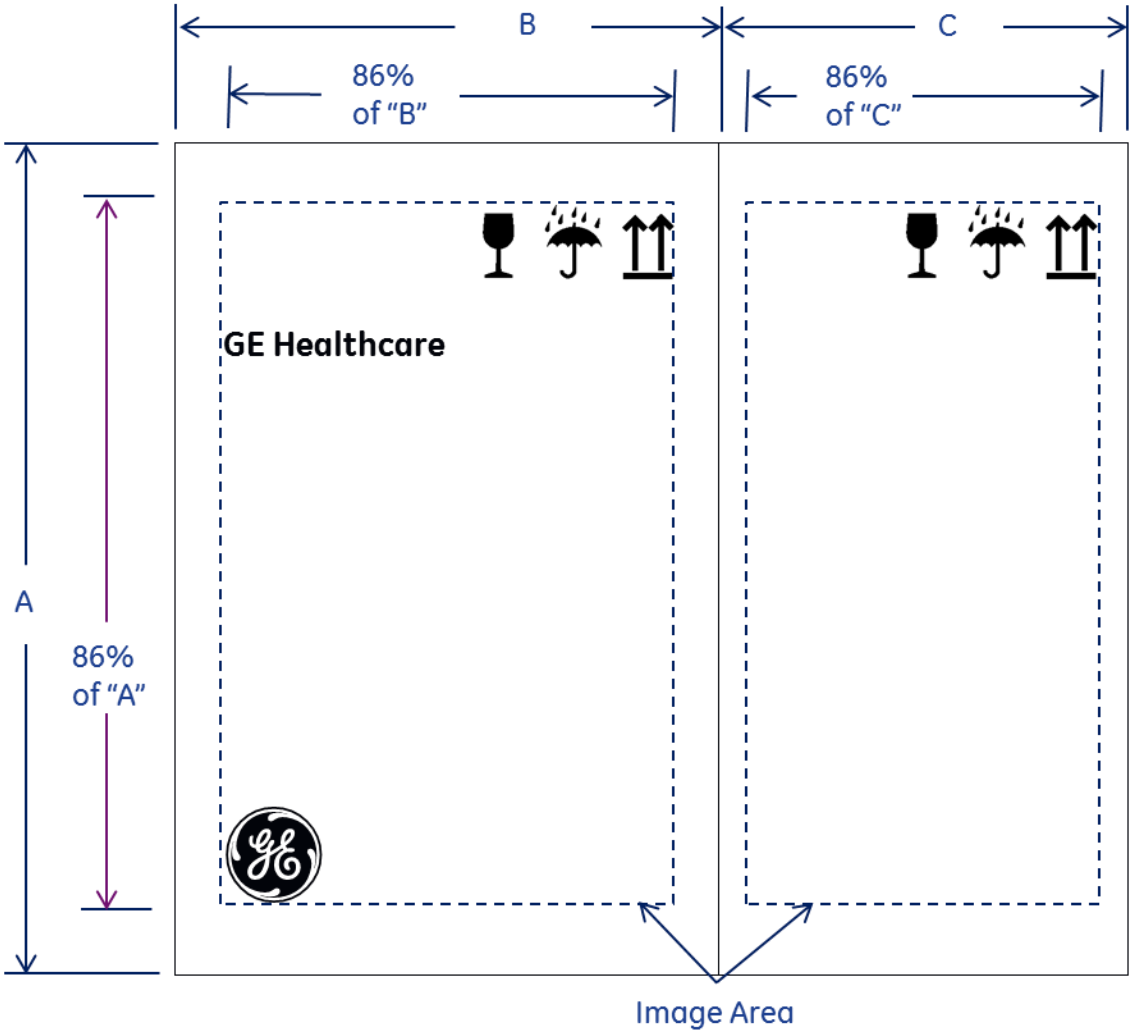
Tall Box Example



1. Graphics should fit into an image area that is 86% of the box panel dimensions
2. Maintain a left margin with GE monogram & GE Healthcare
3. GE monogram to be 14% of height of image area
4. GE Healthcare should be 1/3 the height of monogram
5. Hazard symbols should 2/3 the height of monogram and right aligned in uppermost image area
6. GE Healthcare should be centered with height of symbols but may be below symbols if necessary
7. Use Master Artwork for correct proportions

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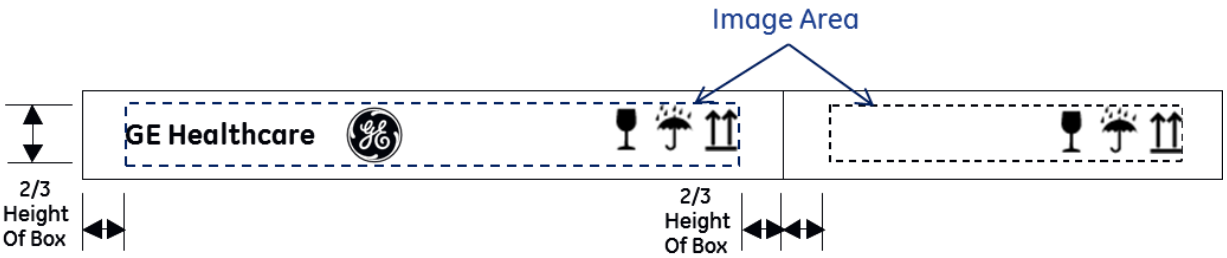
Flat Box Example



1. Graphics should fit into an image area that is 2/3 the height of the box panel
2. GE Healthcare should be left aligned in the image area
3. GE Healthcare should be vertically centered in the image area
4. GE monogram to be the same height as the image area and positioned right of GE Healthcare
5. GE Healthcare should be 1/3 the height of monogram
6. Hazard symbols should 2/3 the height of monogram and right aligned in uppermost image area
7. Use Master Artwork for correct proportions

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10.12 Exhibit # 12 – Drop Testing Examples

The following examples describe the drop test requirements defined in GE document 46-316745.

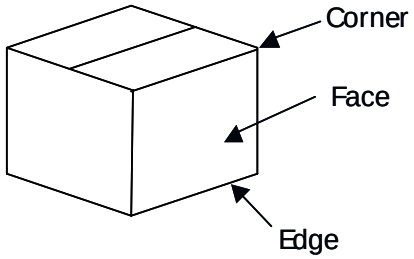
26 – Drop Requirement

- All Six (6) Faces
- All Eight (8) Corners
- All Twelve (12) Edges

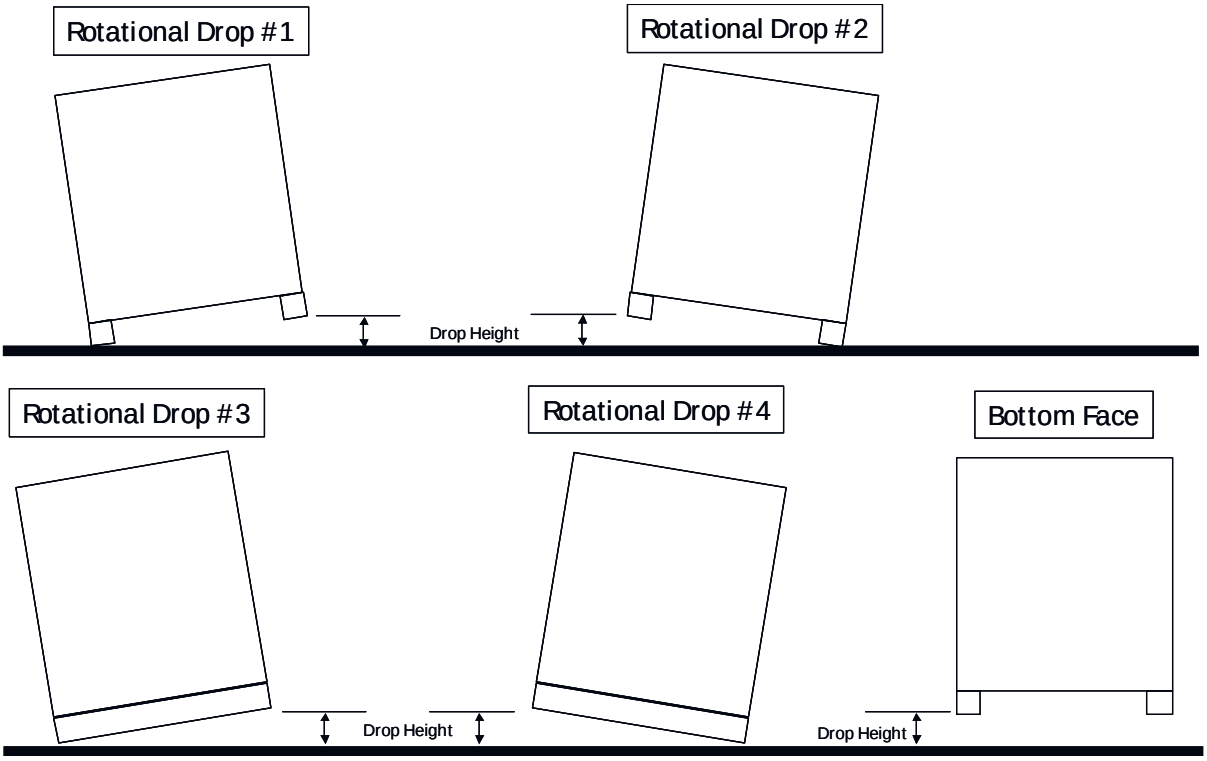
8 – Drop Requirement

- All Eight (8) Corners

Package Surface Definitions



Rotational Drop & Bottom Face Drop Requirement



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10.13 Exhibit # 13 – Packaging Checklist for Ocean Shipment

CRITICAL REQUIREMENTS	CONFIRMED	NOT REQUIRED
1. Product Inspection before Packing		
A. Inspect Product For Any Visible Damage. (Note Exceptions On Documentation)	☐	
B. Inspect Product For Any Visible Corrosion. (Note Exceptions On Documentation)	☐	
2. Crate Wood Base Design		
A. The Base Must Be Strong Enough to Support the Product Size & Weight	☐	
B. The Base Must Include Fork Openings That Allow Safe Handling & Container Loading	☐	
C. The Base Must Be Large Enough to Prevent Crate Tipping During Normal Handling	☐	
D. The Base Must Provide Cushioning When Shock Protection Is Required	☐	☐
3. Moisture Protection		
A. Completely Enclose All Products in a Vapor Barrier Bag	☐	
B. The Vapor Bag Must Have an Airtight Seal with No Holes	☐	
C. Add Desiccant Inside of Vapor Bag in Adequate Quantity to Keep Product Dry	☐	
D. All Wood Materials Located Inside Of the Vapor Bag Must Be Dry	☐	
4. Crate Design		
A. All Crates Must Be Solid Wood or Plywood (Unless Otherwise Authorized)	☐	
B. The Crate Top Must Be Strong Enough to Support Heavy Stacked Loads	☐	
C. All Crates Must Be Strong Enough for Rough Handling & Impacts with Other Freight	☐	
5. Product Secured In Crate		
A. Secure the Product to the Wood Base (As Required)	☐	☐
B. Cushion and/or Block Product(s) Inside Crate to Prevent Free Movement	☐	
C. Block Tall Products at Both Base and Top to Prevent Tipping In Crate	☐	
6. Basic Protection		
A. Provide Protection from **Shock & Vibration** (As Required)	☐	☐
B. All Boxes & Crates Must Be Strong Enough to Resist **Crushing** When Stacked	☐	
C. Protect Product Finished & Painted Surfaces from **Scuffs & Scratches**	☐	
D. Provide **Static** Protection for All Static Sensitive Products (As Required)	☐	☐
E. All Products Must Remain **Dry** (#3 Above)	☐	
F. Protect Products from **Corrosion**	☐	
G. Provide Protection from **Temperature** Extremes and Rapid Changes (As Required)	☐	☐
H. Keep All Products **Clean** and Free From Contamination	☐	
7. Crate Marking & Labeling		
A. Identify Shipper & Destination Address on All Crates	☐	
B. Add Warning Marks, (Up Arrows, Top Heavy, etc.), As Required On All Sides of Crate	☐	
C. Add Special Handling Marks, (Fork This Side Only, Do Not Tip, etc.) (As Required)	☐	☐
D. Attach Tilt Indicator Labels on the Outside of Each Crate	☐	
8. Regulatory Compliance		
A. All Wood Must Meet EU, China, Australia and Other Relevant Import Regulations	☐	
B. All Materials Regulated As Hazardous Must Comply With the IMDG Regulations	☐	

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9. Ocean Container Loading

A. Block & Brace All Crates in the Ocean Container to Prevent Free Movement ☐

10. Packing List

A. Include a Detailed Packing List with the System, Including Weights, Dimensions, and Contents of Each Crate. ☐

11. Product & Packaging Documentation (Optional)

A. It is recommended that the packer take photographs of the system components before packing, and then during, and at the completion of the packing process. The Photographs should be held in the packer's files In case of damage, or other problems with the shipment. ☐ ☐

Product Description: _____ Shipment Reference No.: _____

Packer Name: _____ Date: _____ Signature: _____

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10.14 Exhibit # 14 – GE Healthcare Packaging Optimization "Golden Rules"

GE Healthcare Packaging Optimization
"Golden Rules"

1. **Contain / Protect / Communicate / Comply**..... No damage / Product clearly identified / In compliance
2. **Minimize size**..... Size package to product & pallet to package / Nest parts / No wasted space
3. **Minimize weight**..... Minimize wood, use corrugated & foam where possible

4. **Size to optimize carrier equipment**..... Plan for trucks, ocean containers, aircraft door openings
5. **Size to optimize customer delivery**..... Plan for door openings, elevators, hallways
6. **Minimize number of packages**..... One larger package < $$ than multiple smaller packages
7. **Reuse when possible**..... Reduce scrap and replacement cost
8. **Maximize package density**..... Carriers charge by size/volume for light weight packages***
9. **Allow stacking** (especially when under 200 cm (79") tall)..... Optimize carrier equipment & storage space
10. **Reduce / Reuse / Recycle**..... Drives - material cost ↓ replacement cost ↓ scrap cost ↓ ecomagination ↑

***__**Chargeable Weight**__ = GE charged either actual or volume weight for transportation
Volume weight formula = L" x W" x H" / DIM Factor (Typically 166 or 210)
__**Example:**__ Package 24" x 24" x 24" @ DIM 210 = 66 lbs Chargeable Weight
If package gross weight = 20 lbs, GE pays transportation for 66 lbs
If package gross weight = 67+ lbs , GE pays transportation for 67+ lbs

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Packaging Optimization "Golden Rules" Do's & Do Not's

Do

1. Insure package protects product from damage
2. Design package to match product size
3. Insure product clearly identified
4. Comply with all global regulations
5. Reuse existing packaging when possible
6. Nest oddly shaped items when possible
7. Design package to optimize carrier equipment

Do Not

1. Use over-sized package and ship empty space
2. Use over-sized pallets
3. Ship empty space filled with dunnage
4. Use wood if not necessary
5. Ship uneven pallet loads
6. Add unnecessary restrictions
   (i.e. "Fragile", "This End Up" ↑↑, "Do Not Stack")

❖ No wasted space

❖ Pallet same size as package

❖ Wood crate not necessary
❖ Wasted space

❖ Wasted space filled with dunnage

❖ Nested products save space

❖ Packages optimize container

❖ Pallet larger than package

❖ Uneven pallet load

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10.15 Exhibit # 15 – Compression Testing For GEHC Packaged Products

Test Procedure

Follow the compression test procedure defined in ISTA 2A for packaged products 150 lbs. or less and 2B for packaged products over 150 lbs.

Damage Tolerance

Define the level of damage that is acceptable for product and packaging.

Sampling

- The specimen(s) being tested shall be complete in all respects.

- Whenever sufficient containers and products are available, it is recommended that five or more replicate tests be conducted to improve the statistical reliability of the data obtained.

- If the product does not support any of the compression load, an empty package may be used for the test.

ISTA 2A or 2B Test Sequences

Follow Test Sequences:

1 – Atmospheric Preconditioning

- All materials at ambient temperature and humidity

2 – Atmospheric Conditioning

- Use anticipated distribution humidity and temperature conditions for 72 Hours.

- If conditions are not defined, use “Hot, Humid”, 100 F (38 C), 85% RH for 72 Hours

3 - Compression Test – Use one of the following three test methods:

A. Machine Apply and Release

Force = (Total weight of packaged product) x (Total No. in stack*) x 5** x 1.4

Time = Release compression after reaching defined force.

B. Machine Apply and Hold

Force = (Total weight of packaged product) x (Total No. in stack* -1) x 5**

Time = 60 minutes

C. Dead Weight and Load Spreader

Load = (Total weight of packaged product) x (Total No. in stack* -1) x 5**

Time = 60 minutes.

* If total number in stack is unknown, divide 90 by the height of the package in inches or 2.3 by the height of the package in meters and round up to the next whole inch or cm.

** GE Healthcare defined compensating factor

Test Documentation

The testing shall be documented following the minimum requirements defined in this document, 2100268PRE, *“Global Packaging Requirements”*, Section 6.1.3.

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11.0 Reference Documents

The following references provide very detailed design specifications, material selection criteria, governmental regulations, and other information that applies to these packaging guidelines, but are beyond the scope of this document:

11.1 General Reference #1 – Package Design Specifications

11.1.1 Japanese Industrial Standard (JIS)

JIS Z 1403 – Wooden Framed Boxes for Export Packing
Covers – Detailed design specifications and material selection guidelines for wooden framed boxes for contents of 500 kg (1100 lbs.) or more

11.1.2 General Electric CGR - Packaging Guide

Reference No. 90082, 2/1/91
Covers – General package and material selection and design procedures

11.1.3 U.S. Department Of Agriculture

Handbook No. 252 – Wood Crate Design Manual
Covers – Detailed design specifications and material selection guidelines for wooden framed crates

11.1.4 U.S. Federal Specification

PPP-B-621 – Boxes, Wood, Nailed and Lock-Corner
Covers – Detailed design specifications and material selection guidelines for wood boxes

11.1.5 Hazardous Material Shipping Regulations

11.1.5.1 Air Transportation

IATA Dangerous Goods Regulations
International Air Transport Association
2000 Peel Street
Montreal, Quebec
CANADA H3A 2R4

11.1.5.2 Ocean Transportation

International Maritime Dangerous Goods Code (IMDG)
International Maritime Organization
4 Albert Embankment
London SE1 7SR

11.1.5.3 U.S. Domestic Surface Transportation

United States Code Of Federal Regulations, CFR 49, Parts 100 to 199.
U.S. Department of Transportation
Washington, DC 20402
USA

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11.1.6 Package Testing

11.1.6.1 GEHC Document **46-316745**, *"Mechanical Environment Test Guideline"*

11.1.6.2 ISTA (International Safe Transit Association) Procedures 2A & 2B

11.1.6.3 ASTM (American Society for Testing & Materials) Standard D4169

11.2 General Reference #2 – Distribution Environment Reference Data

11.2.1 GE Healthcare Data

11.2.1.1 Shock & Vibration Data

Reference Engineering Document **46-316745**, *"Mechanical Environment Test Guideline"*

11.2.1.2 Environmental Data

Reference Engineering Document **2252595PRE**, *"Thermal Environment Test Guideline."*

11.2.1.3 Temperature Extremes

+70C (+158F) to -40C (-40F)

11.2.1.4 Relative Humidity Extremes

10% to 95%

11.2.2 Addressing GE Healthcare Legacy Product

GE Healthcare has established engineering standards for testing of equipment during the design phase to ensure product is adequately verified for use and storage in various temperature and humidity ranges. The engineering standard for Thermal Test Guideline 2252595PRE references the Mil-Std 810G as part of the conclusion to recommend non-operating temperature test limits of -40C to 70C and humidity testing limits of 10% to 95% non-condensing.

Two studies have been performed in GE to track the environmental conditions during global shipping, to determine if these exceeded the capabilities of the GE products.

The first study is the Voluson study (DOC1913662 rev02). This investigation was performed for the Voluson products manufactured in Austria and include a temperature logger in the packaging. The study aimed to cover the worst-case shipping conditions, including 14 destinations both warm and cold. The study was performed between July 2016 and January 2017, thereby addressing both summer and winter conditions. The testing was performed using 7 Temperature loggers of the type Tempmate -S1 V2.0. This investigation showed that at no point did the temperature in the packaging go beyond the range -40°C to 70°C, which is within the range covered of the Thermal Test Guideline.

During the summer or warm temperature logs, the maximum temperature recorded was 44.3°C, below the upper limit of 70°C.

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Warm/Summer Temperature Logger Results:

Console/Probe Type	Console/Probe SN	Logger SN	Start (DD-MM-YY)	Stop (DD-MM-YY)	Shipment from	Shipment to	Max Temp Console [°C]	Min Temp Console [°C]	Average Temp Console [°C]
VE6 BT16	E03608	S116060007-06	13-09-16	10-10-16	Zipf	Singapore	31.5	14.5	28.3
VE6 BT16	E03566	S116060007-07	12-08-16	21-09-16	Zipf	Kuwait	44.3	16.6	27.7
VE6 BT16	E03586	S116060007-08	12-08-16	03-10-16	Zipf	Oman	41	18.1	27.2
VE8 BT16	E33889	S116060007-09	03-08-16	01-10-16	Zipf	Taipei City	32.8	13.1	21.3
VE6 BT16	E03607	S116060007-10	08-09-16	10-10-16	Zipf	Dubai	38.9	19.6	24.2
VE10 BT16	E63976	S116060007-11	07-09-16	16-09-16	Zipf	Sydney	27.7	18	22.7
VE8 BT16	E33989	S116060007-01	05-10-16	03-11-16	Zipf	Jakarta	31.6	11.9	26.5

During the winter or cold temperature logs, the minimum temperature recorded was -2.4°C, above the lower limit of -40°C.

Console/Probe Type	Console/Probe SN	Logger SN	Start (DD-MM-YY)	Stop (DD-MM-YY)	Shipment from	Shipment to	Max Temp Console [°C]	Min Temp Console [°C]	Average Temp Console [°C]
VE8 Exp BT13.5	D24611	S116060007-02	29-11-16	20-12-16	Zipf	Vilnius, Lithuania	23.3	1.3	9.5
VE8 BT16	E34026	S116060007-03	Logger was not started		Zipf	Turkey	--	--	--
VE8 BT16	E34046	S116060007-04	05-12-16	26-03-17	Zipf	Mississauga, On, Canada	23.2	-2.4	20.7
VE8 BT17	E36284	S116060007-05	06-12-16	25-01-17	Zipf	Kirkenes, Norway	23.6	-1	20.3
VE6 BT13.5	D65079	S116060007-12	12-12-16	20-12-16	Zipf	Malmö, Sweden	34.1	2.2	14.2
VE10 BT17 OLED Monitor	E66580	S116060007-13	27-01-17	17-02-17	Zipf	Spain	25.6	2.2	12.4
VE8 BT17	E36430	S116060007-14	27-01-17	02-02-17	Zipf	Vienna	24.3	5	15.6

The second study is the Logiq study (DOC2136753 Attachment 1 – Logiq Ocean shipping study and Attachment 2 – Logiq Ocean ship update). This study was performed for the Logiq range manufactured in USA and Korea. This study was conducted between July 2016 to October 2016. Here probes and consoles were shipped by air, land and sea between Europe, USA and Korea during the summer. Both temperature and humidity were monitored using data loggers of the type LogTag model Haxo-B. The highest temperature inside the packaging was below 45°C and 58°C on the outside of the packaging. The recorded humidity outside the packaging was below 93% in all situations and below 80% inside.

Empirical observations of actual transport	
Temperature range	-10° to 58°C
Humidity range	30% to 93% outside and 80% inside.
Tempe drop @ starting humidity	Outside box: 50°C to 10°C /approx 10hrs @ 50% to 93% Inside box: 42°C to 17°C /approx 8hrs @ 50% to 78%

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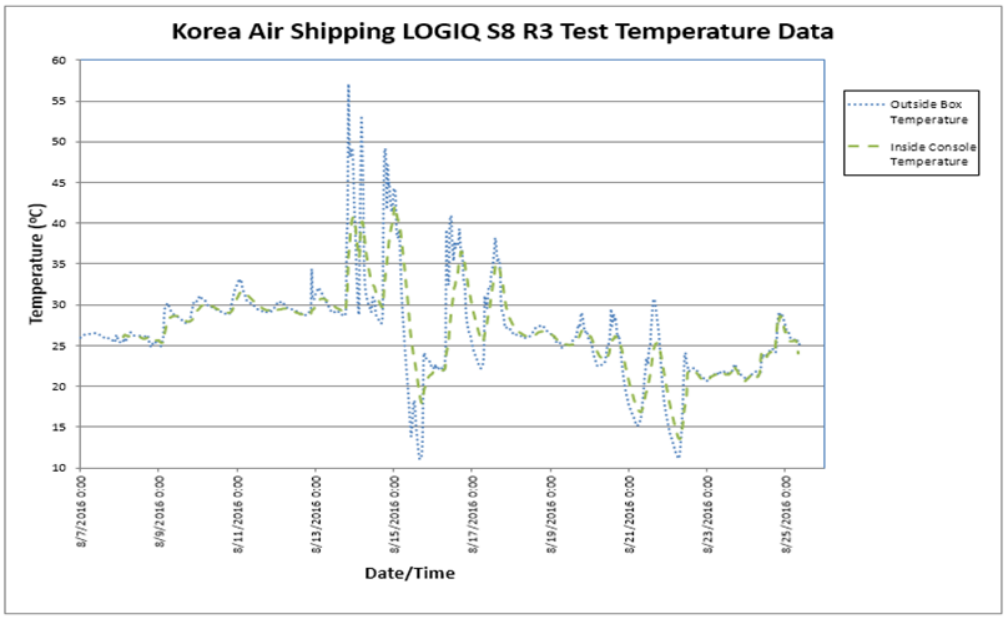
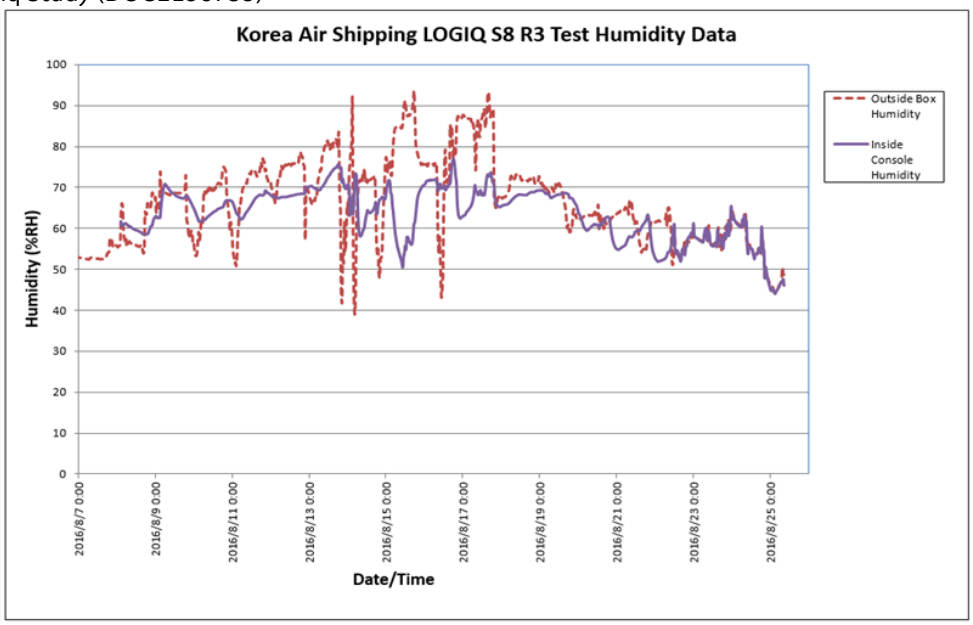
Temperature Plot for Logiq Study (DOC2136753)



Humidity Plot for Logiq Study (DOC2136753)



Additionally, an external study was conducted by Xerox for ocean transport to demonstrate actual conditions of over 160 shipments from April 2004 to January 2006. Shipments were made over all months from different regions including Japan, USA (Memphis) and the Netherlands. Using data loggers, the most extreme temperature conditions noted were a high temperature of 57°C (on a trip from Japan to Memphis during the month of July) and a low temperature of -21°C (on a trip from Japan to Memphis during the months of December & January). These actual conditions are also within the GE Healthcare ranges for thermal testing guidelines. See DOC2136753 Attachment 3 for additional details.

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Lastly, post market data was also reviewed to determine impact to legacy products. Data analysis was performed for the all the P1 trending trips based on the complaints associated with the Risk Management hazards closed on or after Jan 2018. A total of 47 records were reviewed and from the detailed investigational analysis there are no trips that were associated with the transportation/storage environmental controls."

Conclusion: Due to purchasing of items in original vendor packaging and previous GE Healthcare marking practices, the information printed on the side of the boxes for temperature and humidity are not used as an indicator of temperature and humidity requirements during transport. GE Healthcare performs environmental testing of the product and packaging which is a better indication of reliability. Studies conducted by GE Healthcare and external parties indicate that the actual temperature/humidity ranges are within the ranges set forth in the Thermal Testing guideline which product is tested to during the design phase. As product is distributed within the ranges it has been tested to, we can conclude there is no adverse impact to product exposed to temperature/humidity ranges outside those printed on the box, as these actual conditions are still within the design test range. Based on the extensive testing that was performed, it was considered unnecessary to perform any monitoring of actual shipping conditions.

11.2.3 General Industry Data

NOTE: This information is provided as a reference only. It covers the global distribution system and is not limited to the GE Healthcare distribution system.

11.2.3.1 Approximate Fragility of Typical Packaged Products

Extremely Fragile
Aircraft altimeters, Winchester hard disc drives---------- 15 – 25 G's

Very Delicate
Medical diagnostic apparatus, x-ray equipment---------- 25 – 40 G's

Delicate
Computer display terminals and printers, electric typewriters -------- 40 – 60 G's

Moderately Delicate
Stereos and television receivers, floppy disc drives ---------- 60 – 85 G's

Moderately Rugged
Major appliances and furniture ---------- 85 – 115 G's

Rugged
Table saws, sewing machines, machine tools ---------- 115 G's & up

11.2.3.2 Typical Drop Heights

Weight Range (Gross Wt. kg (lbs.))			Type of Handling	Drop Height cm (Inches)
0	-	4.5kg (10 lbs)	1 person throwing	106cm (42in)
4.5kg (10lbs)	-	9kg (20lbs)	1 person carrying	91cm (36in)

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9kg (20lbs)	- 22.5kg (50lbs)	1 person carrying	76cm (30in)
22.5kg (50lbs)	- 45kg (100lbs)	2 people carrying	61cm (24in)
45kg (100lbs)	-112.5kg (250lbs)	Light mechanical handling	45cm (18in)
112.5kg (250lbs) and greater		Heavy mechanical handling	30cm (12in)**

** Palletized products may receive drops of 15cm (6 inches)

11.2.3.3 Typical Vibration Forcing Frequencies of Carriers

Carrier	Frequency Range	Conditions
Truck (Air Ride)	(see GEHC Eng Dwg. 46-316745) "Mechanical Environment Test Guidelines"	Normal Highway Travel
Truck (Spring Ride)	2 - 7 HZ (Suspension) 15 - 20 HZ (Tires) 50 - 70 HZ (Structural)	Normal Highway Travel
Aircraft	2 -1000+ HZ (Engine Turbine)	On aircraft floor during flight
Ship	0.1 - 11 HZ (On Deck) 5 - 200 HZ (Bulkheads)	Vibrations caused by the flow of water and propeller system
Rail	1-4 HZ Main 0.034 RMS Peak Mean @ 3.5 HZ (Longitudinal) 0.640 RMS Peak Mean @3.5 HZ (Vertical) 0.100 RMS Peak Mean @ 4.8 HZ (Vertical) 0.003 RMS Peak Mean @ 2.5 HZ (Lateral) Typical Rail Shock Loads	Rail joints and crossings
	0.95 G to 1.4 G Vertical	Crossings
	10 G 30ms Horizontal	Coupling
	2.3 G 250ms Horizontal	Coupling

11.2.3.4 Typical Aircraft Main Deck Cargo Area Temperature and Pressure Ranges

Temperature (Air France Data)
- Normal → 20C to 25C (68F to 77F)
- Minimum → 5C to 10C (41F to 50F)
- Maximum → 25C to 30C (77F to 86F)

Pressure
- Maintained at 2700M (8000 FT) → 75kPa (10.6 lb/sq. in)

Temperature (JAL Data)
- Normal → 15C to 20C (60F to 68F)
- Minimum → 2C to 7C (35F to 45F)
- Maximum → 21C to 27C (70F to 80F)

11.2.3.5 Temperature Extremes for All Modes

+75C (+167F) to -56C (-70F)

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11.2.3.6 Altitude Extremes for All Modes

Sea Level to 5200m (17,000 ft) →101.5 kPa (14.7 lb/sq. in) to 52.7 kPa (7.6 lb/sq. in)

11.3 General Reference #3 – Wood Box Design Criteria

11.3.1 Methods of Construction

The selection of materials and methods of construction shall be made after a consideration of the products weight, size, physical characteristics, final destination, mode of transport and the existence of special requirements. Design must not use nails or other fasteners that cannot be reused in areas where part of the wood box needs to be removed to access the product.

11.3.2 Wood Box Designs

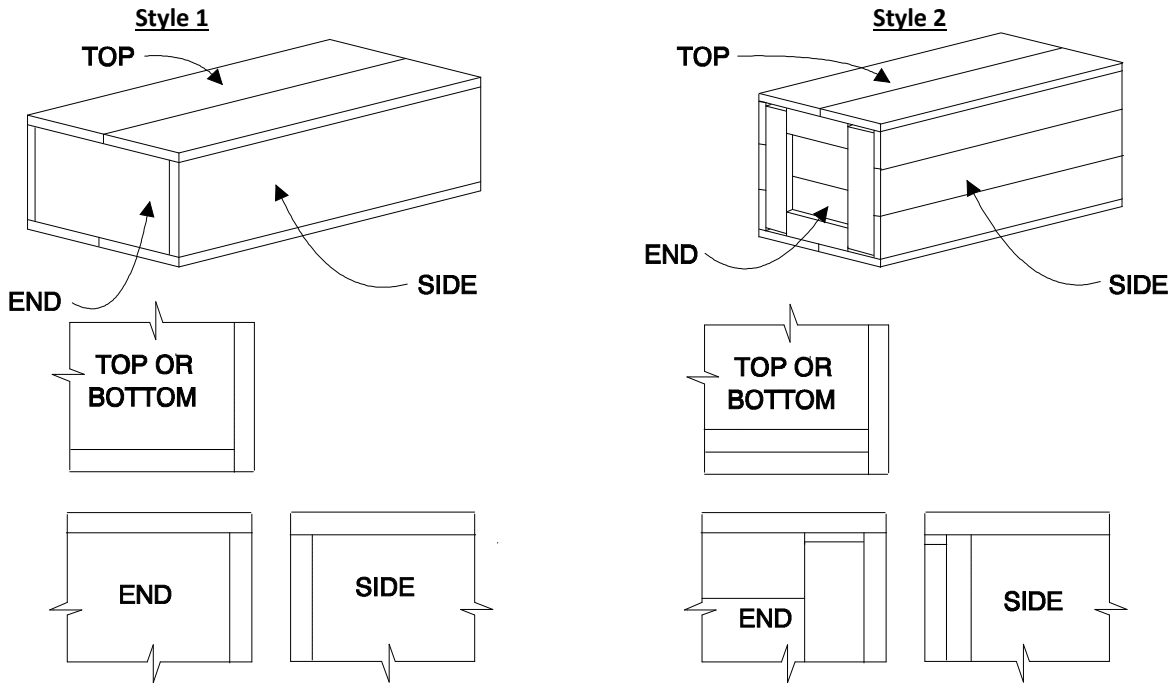
For the general packaging of small items, reference the examples below for typical nailed wood box designs and applications:

Nominal 2.5cm (1") lumber can be used to construct boxes up to 270kg (600 lbs).

Nominal 5cm (2") lumber shall be used to construct boxes over 270kg (600 lbs).

Boxes over 50 kg (110 lbs) gross weight require the addition of bottom runners to provide a minimum of 10 cm (4.0"), clearance for forklift and pallet truck entry.

Typical Nailed Wood Box Designs



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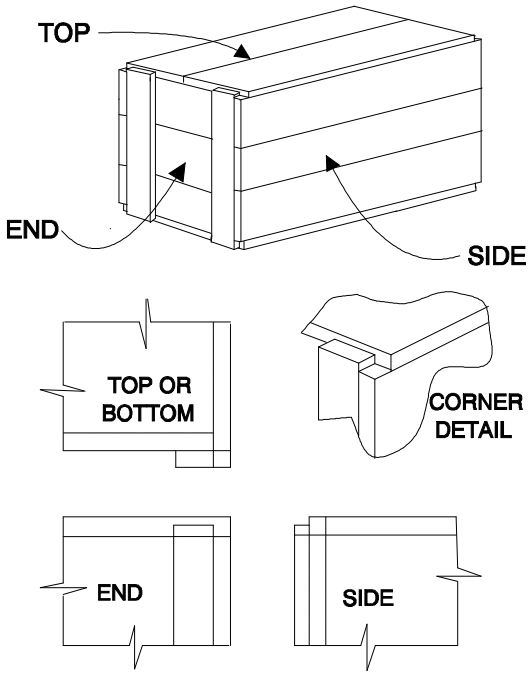
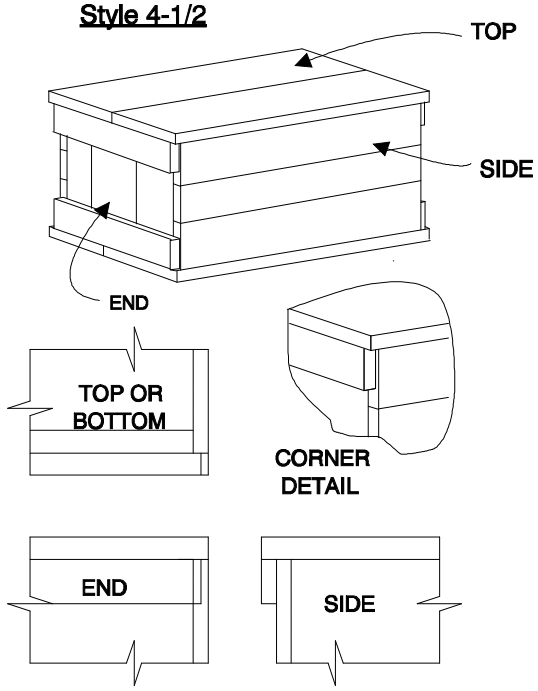
Typical Nailed Wood Box Designs (continued)

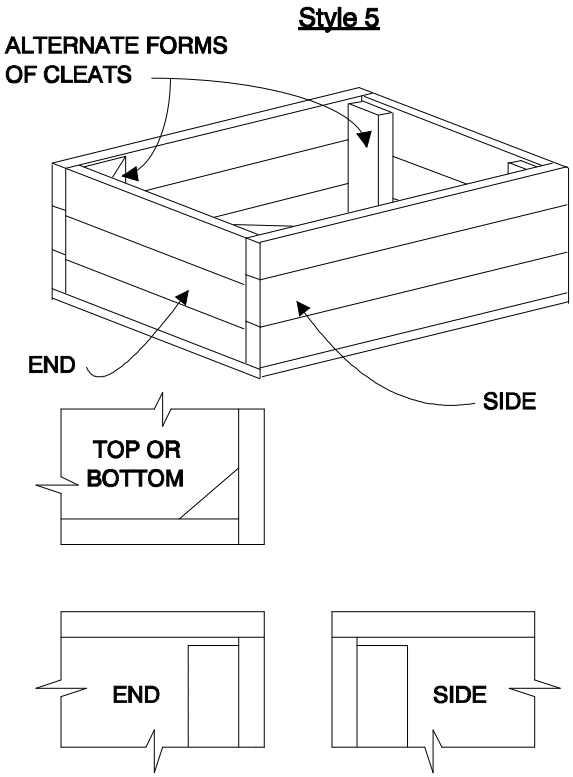
Style 4



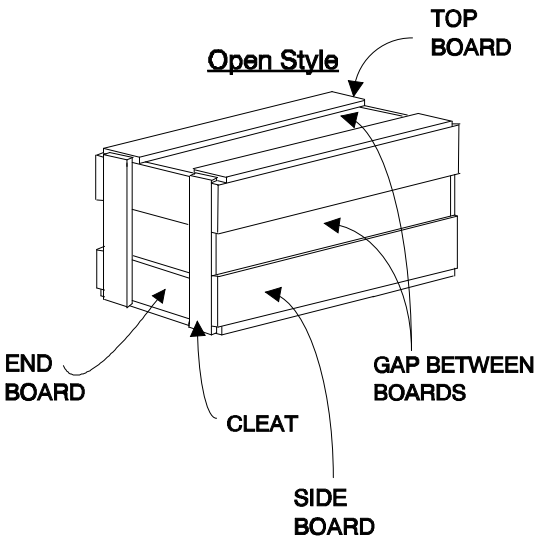
Style 4-1/2



Style 5



Open Style



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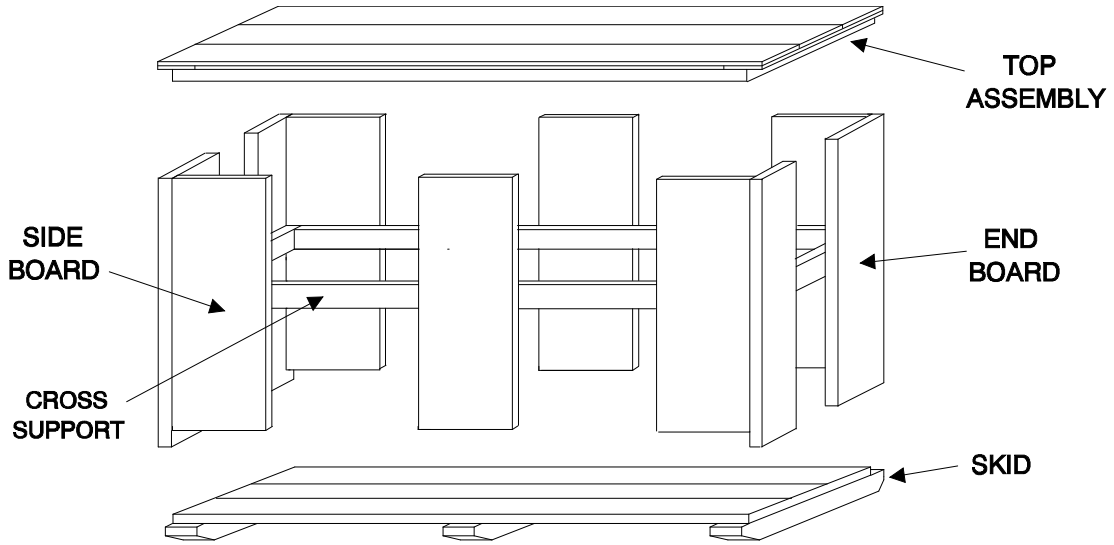
11.4 General Reference #4 – Open Wood Crate Design Criteria

11.4.1 Example #1

A typical design consists of a top assembly with individual boards making up the sides and ends, or complete side, end, and top assemblies. The following example shows individual boards for the sides and ends and includes a 5 cm (2”) cross support to add strength and rigidity.

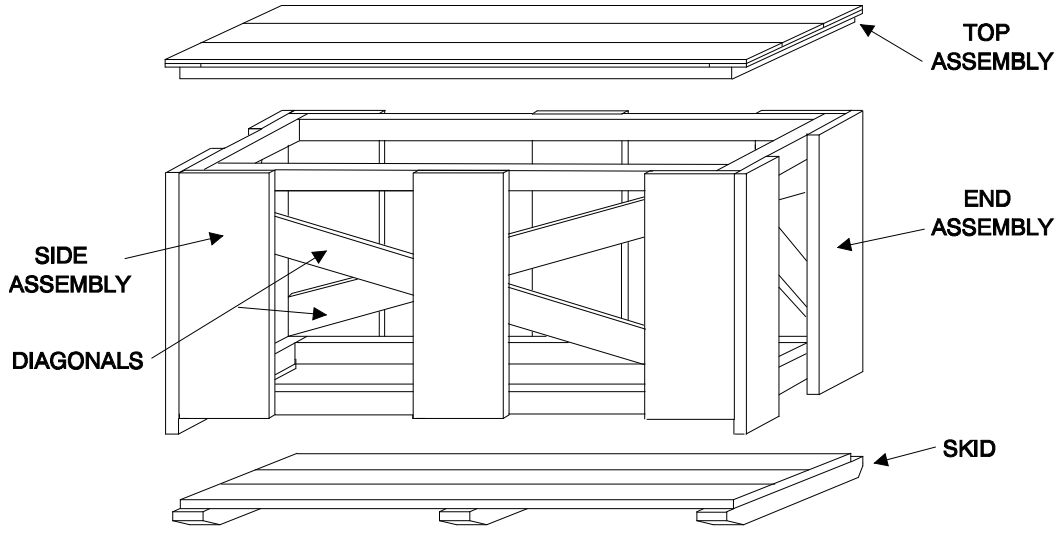
Open Wood Crate Design Example



11.4.2 Example #2

The following example shows a crate with side, end, and top assemblies, and also diagonals for added strength and rigidity.

Prefabricated Panel Crate Design Example



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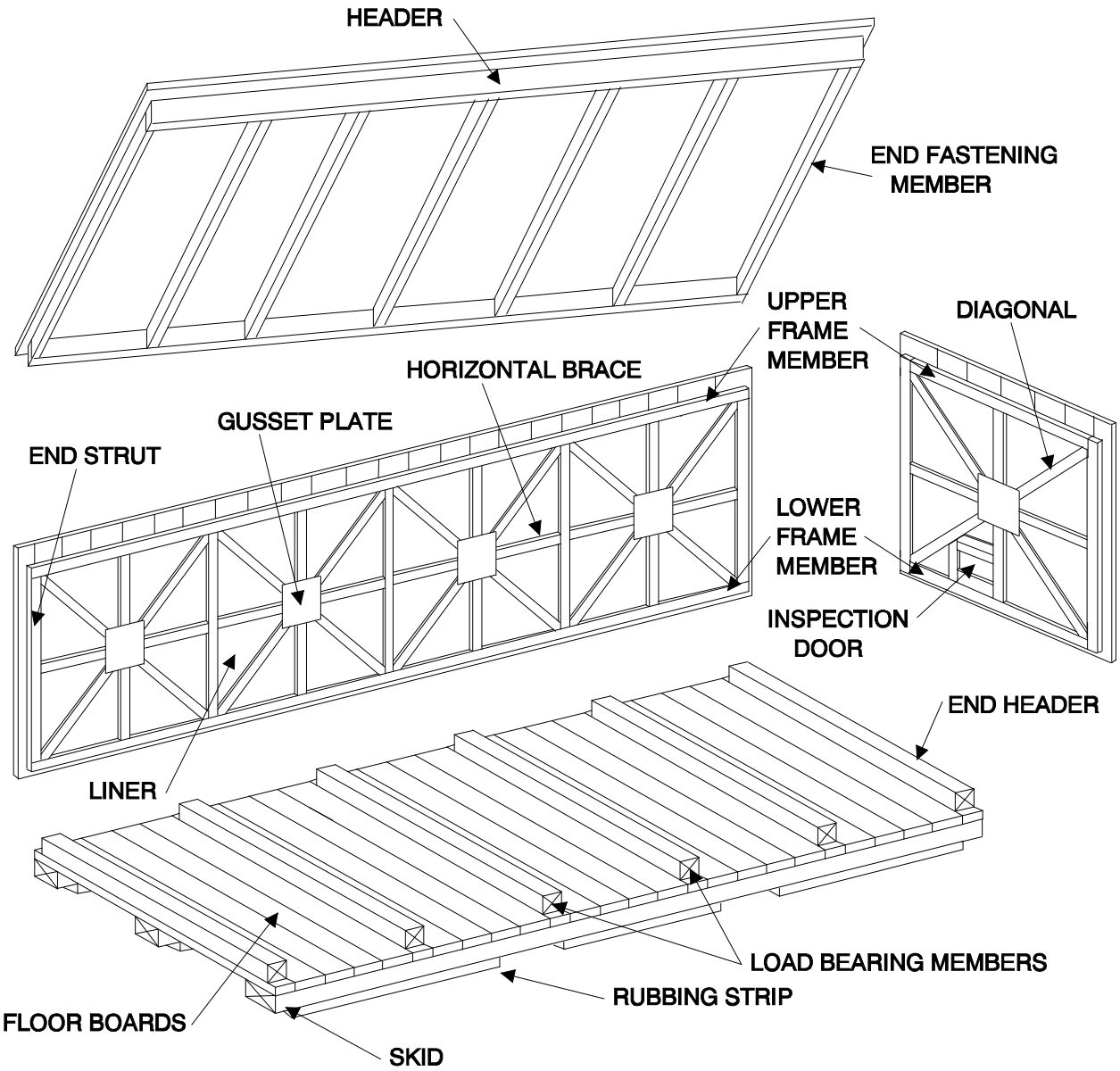
11.5 General Reference #5 – Solid Wood Crate Design Criteria

A typical solid wood crate consists of a skid base, sides, ends and a top. The construction of the solid wood crate and material selections are dependent on the size and gross weight of the completed package and on any special handling requirements anticipated during distribution.

Solid Wood Crate Design Example



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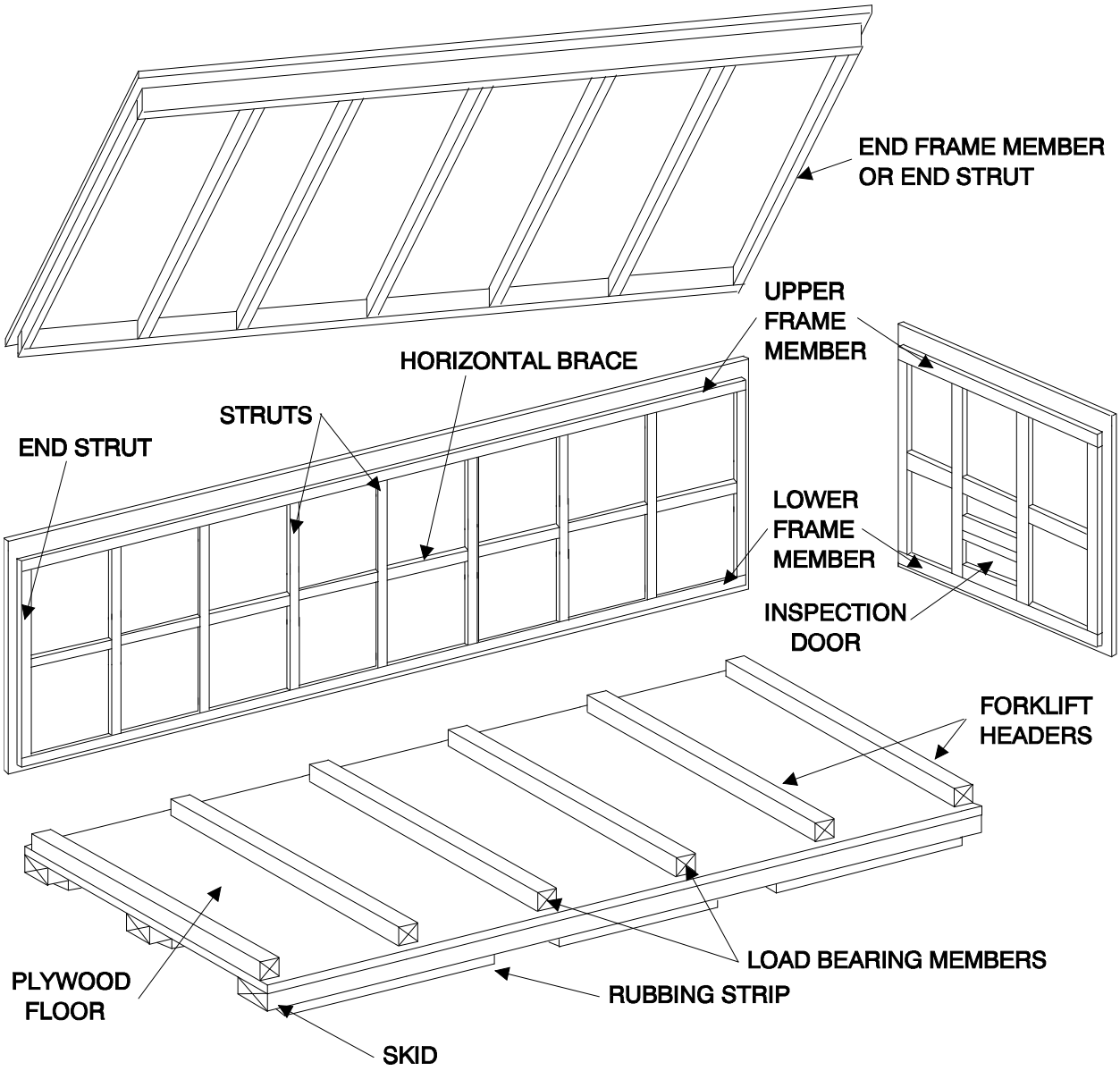
11.6 General Reference #6 – Plywood Crate Design Criteria

A typical plywood crate consists of a skid base, sides, ends, and a top. The construction of the plywood crate and material selections are dependent on the size and gross weight of the completed package, and on any special handling requirements anticipated during distribution. Sheet materials other than plywood, such as chipboard, particleboard, hardboard, and other similar products, may be used in place of plywood, as long as they provide adequate strength and durability, and do not jeopardize, in any way, the integrity of the crate.

Plywood Crate Example



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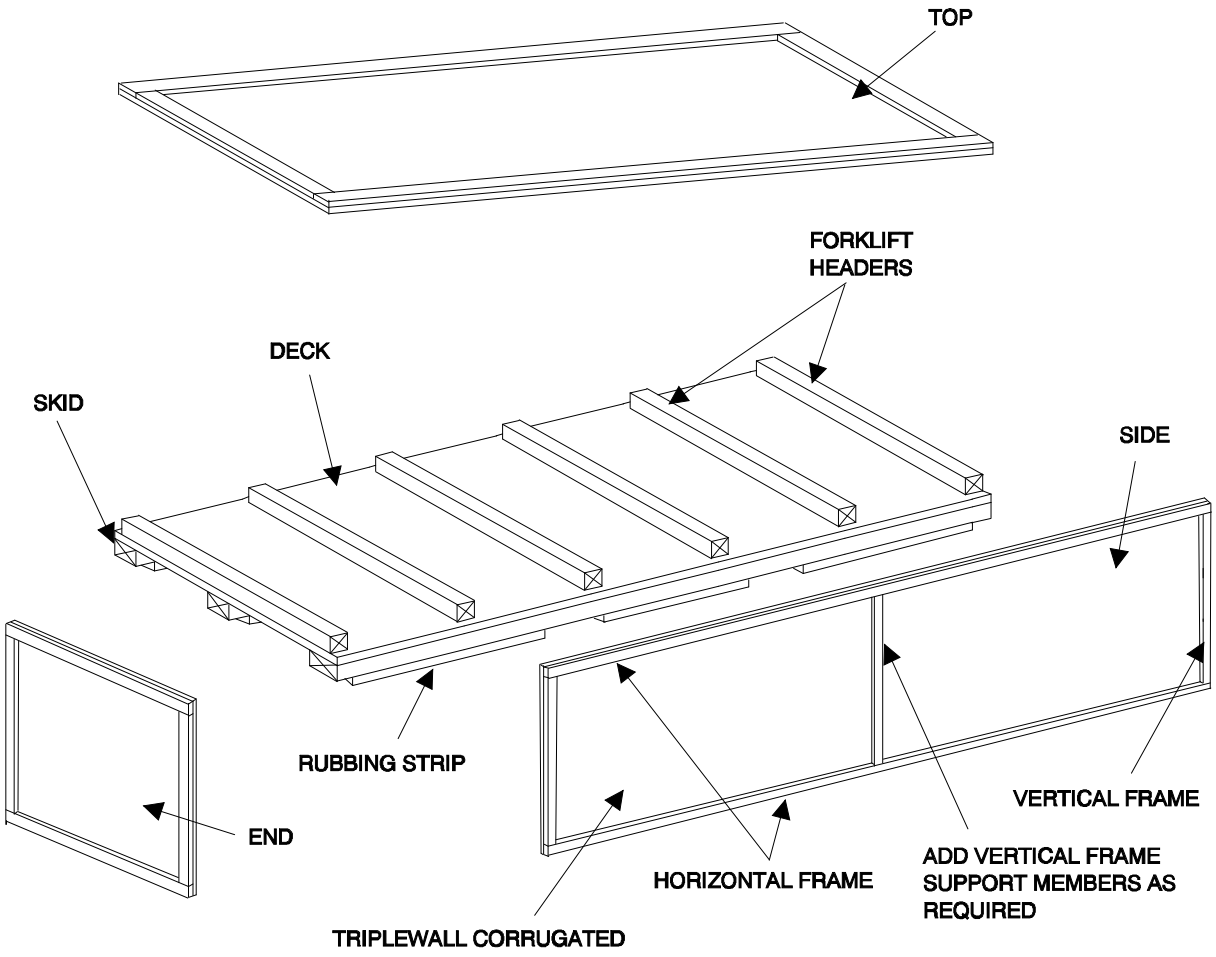
11.7 General Reference #7 – Wood Reinforced Triple-wall Corrugated Crate Design Criteria

A typical triple-wall corrugated crate consists of a skid base, sides, ends, and a top. The construction of the triple-wall crate, number of vertical frame members and material selections are dependent on the size and gross weight of the completed package, and on any special handling requirements anticipated during distribution. Wood frame members are required along the edges of the corrugated sheets and at the corners of the crate to provide a solid surface for the crate fasteners.

Wood Reinforced Triple-wall Corrugated Crate Example



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11.8 General Reference #8 – Nailing

11.8.1 Nail Length Requirements

Nail Length Requirements per Material Thickness

Thickness of Material Holding Head of Nail (Actual Dims.)	Thickness of Material Holding Point of Nail (Actual Dimensions)				
	19mm (3/4")	38mm (1-1/2")	63.5mm (2-1/2")	89mm (3-1/2")	140mm & Up (5-1/2")
9.5mm & 13mm (3/8" & 1/2") Plywood	32mm (1-1/4")	38mm (1-1/2") 44.5mm (1-3/4")			
19mm (3/4")	38mm (1-1/2"	51mm (2") 57mm (2-1/4")	51mm (2") 63.5mm (2-1/2")	51mm (2") 63.5mm (2-1/2")	51mm (2") 63.5mm (2-1/2")
38mm (1-1/2")		76mm (3") 82.5mm (3-1/4")	76mm (3") 82.5mm (3-1/4")	76mm (3") 82.5mm (3-1/4")	76mm (3") 82.5mm (3-1/4")

11.8.2 Nailing Method

The nailing method shall be as follows:

11.8.2.1 Drive nails through the thinner member into the thicker member whenever possible.

11.8.2.2 Drive nails so that neither the head nor the point project above the surface of the wood.

11.8.2.3 Drive nails not less than the thickness of the piece from the end nor one-half the thickness of the piece from the side edge of the piece, unless assembly requires closer end spacing.

11.8.2.4 Drive nails in rows and staggered slightly within the row to prevent splitting. Nail each member to each mating member with not less than two nails unless specified otherwise.

11.8.2.5 When attaching two members not having parallel grains, use the nailing pattern and number of nails shown in "Right Angle" and "Diagonal" examples below.

11.8.2.5.1 Typical nailing pattern to be used for various types of wood boxes is shown below.

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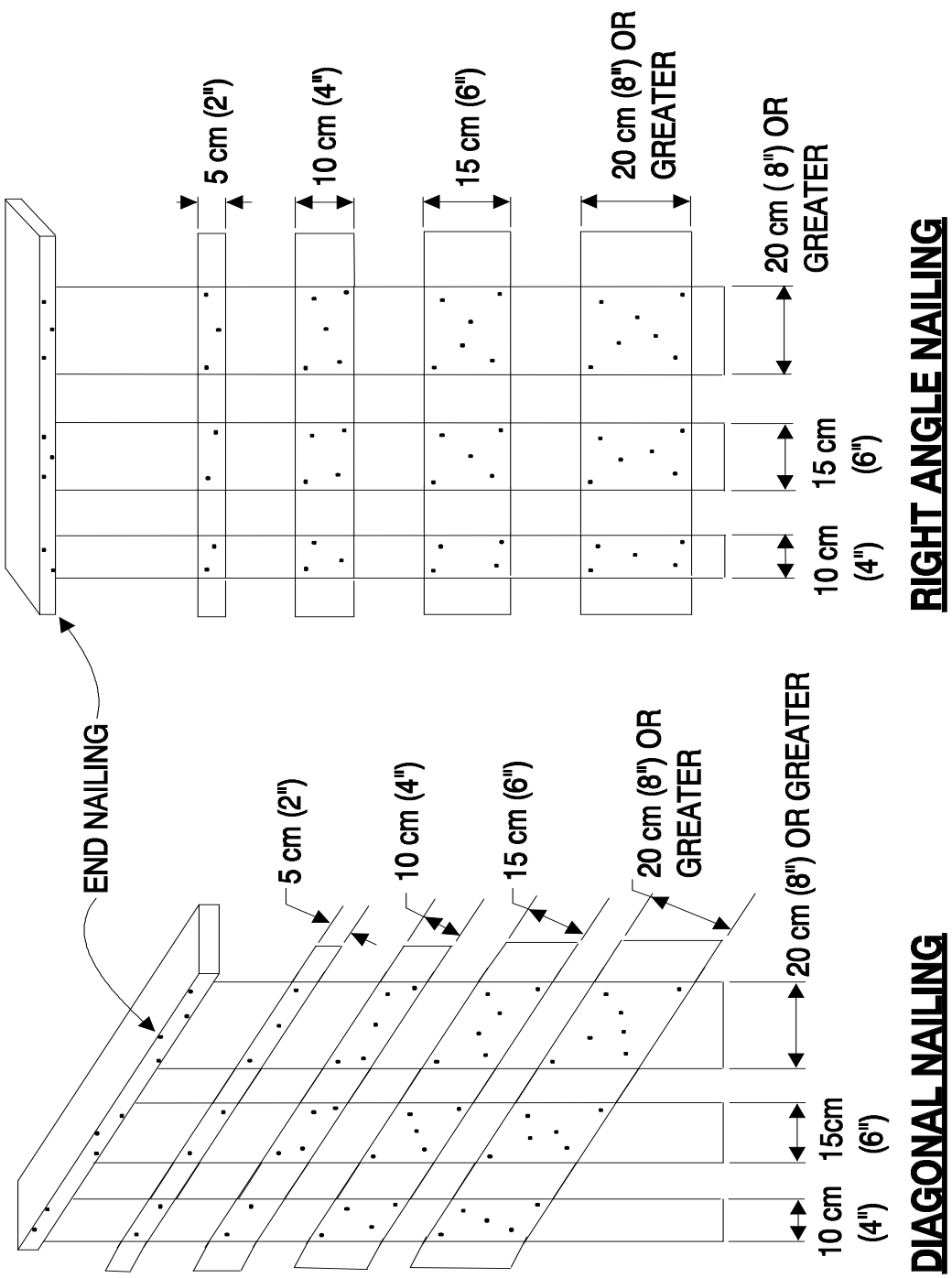
11.8.3 Nail Type – Use "ring shank" nails for maximum holding strength.

Nailing Patterns for General Crate Construction

NOTE: NAILS DRIVEN WITHIN 10 cm (4") OF EACH OTHER SHALL NOT BE IN THE SAME LINE OF GRAIN ON EITHER OF THE MEMBERS BEING NAILED.



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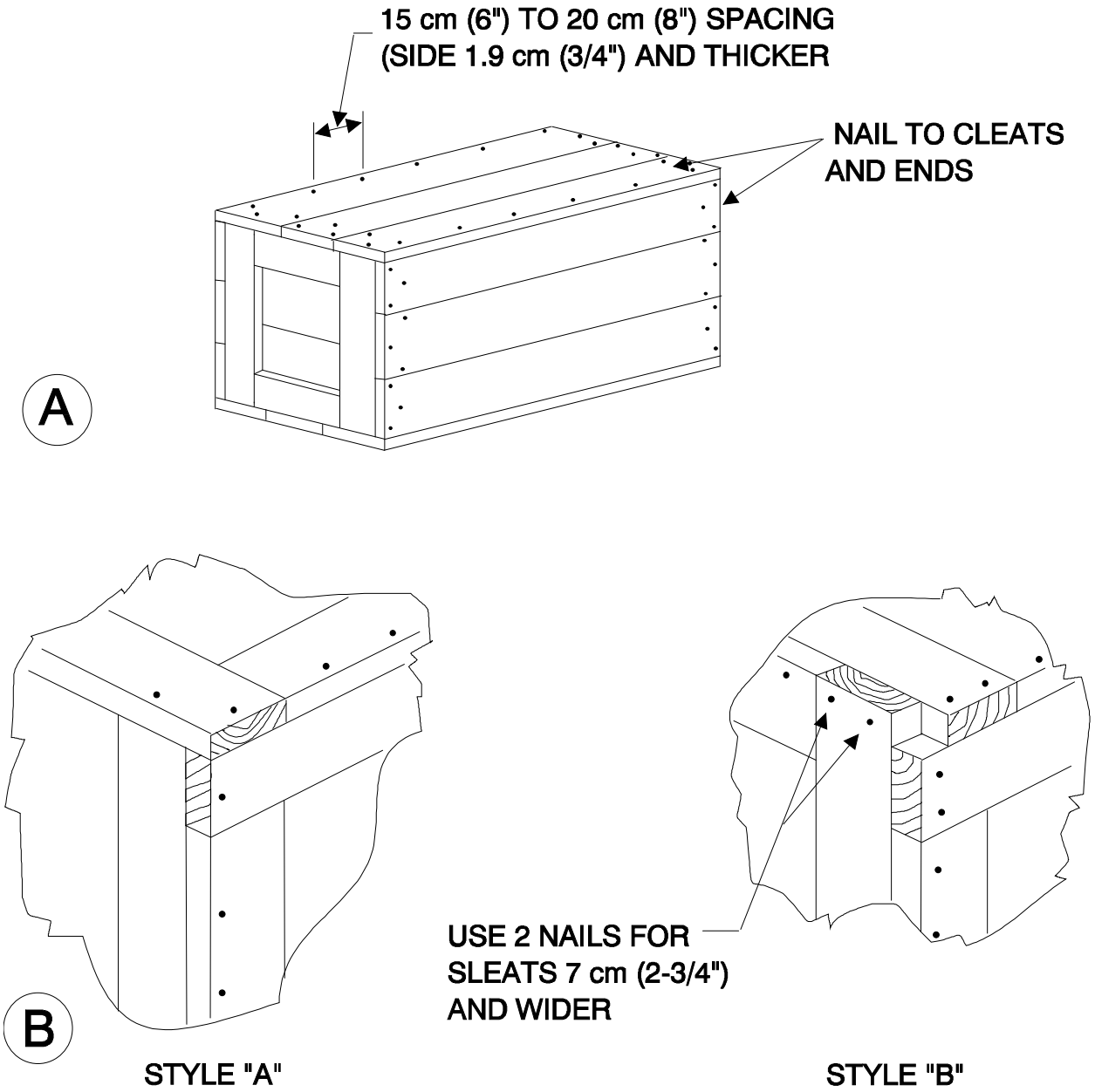
Typical Wood Box Nailing Patterns

For "A", Nailed Wood Boxes / "B", Cleated Panel Boxes



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11.9 General Reference #9 – Guide for Minimum Packaging Protection for Steel Sheeting, Beams, and Similar Metal Materials for Air Shipment

This section provides guidance for packaging loose steel sheets, beams, studs, and other similar materials, to meet minimum airline safety requirements. The main concerns of the airlines are that the bundles allow access for easy handling, there are no exposed metal corners to damage the aircraft during loading and unloading, and that all materials are adequately secured so that no bundle or individual piece can shift during flight. The minimum requirements vary by airline, but the following are typical:

- Materials must be secured to a wood base or wood runners that allow mechanical handing access. See Figures “A” & “B”.
- Bundles must not have any exposed metal corners. The wood base must extend out beyond all corners of the metal materials or wood blocking must be added around the metal corners. See Figures “A” – “D”.
- All pieces must be adequately secured on all sides and ends. See Figures “A” – “D”.
- Bundles of long pieces with small cross sections (i.e., beams, studs, pipes, etc.) must have wood blocking covering the ends to prevent any pieces from sliding out. See Figure “D”.
- Bundles containing pieces of different size must have blocking around the smaller pieces to prevent any shifting. See Figures “C” & “D”.
- Bundles must not exceed 2268 kg (5000 lbs.) gross weight.

Figure “A”- Steel Bundle on Wood Base

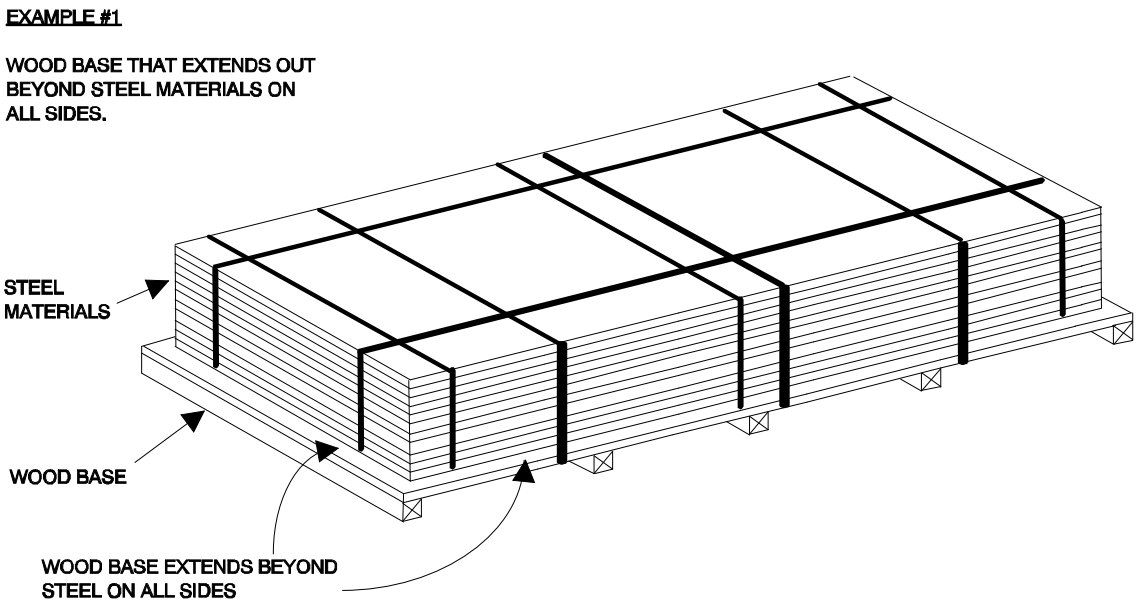

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Figure "B" – Steel Bundle on Wood Runners with Wood End Caps

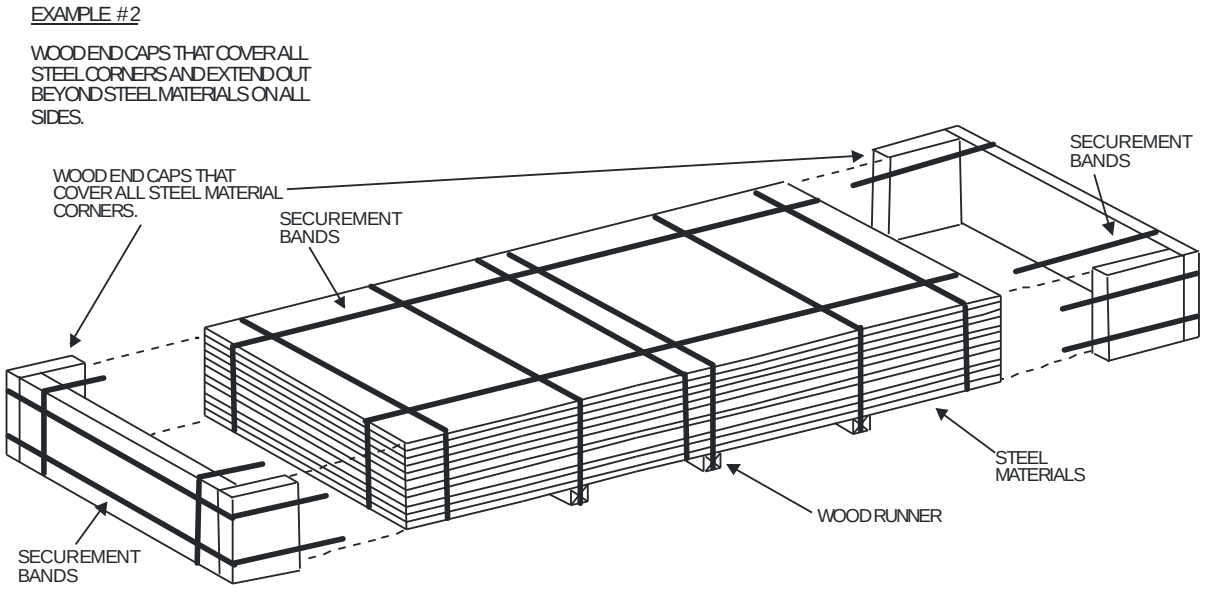

Figure "C" – Steel Bundle with Multiple Length Pieces

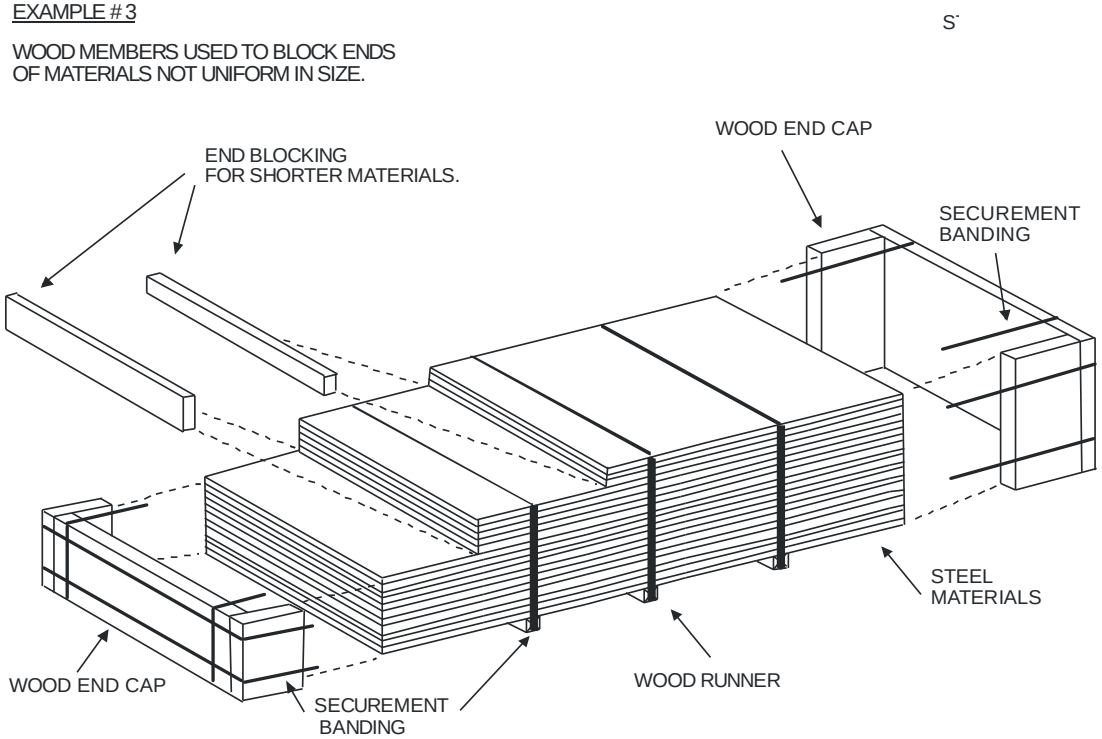

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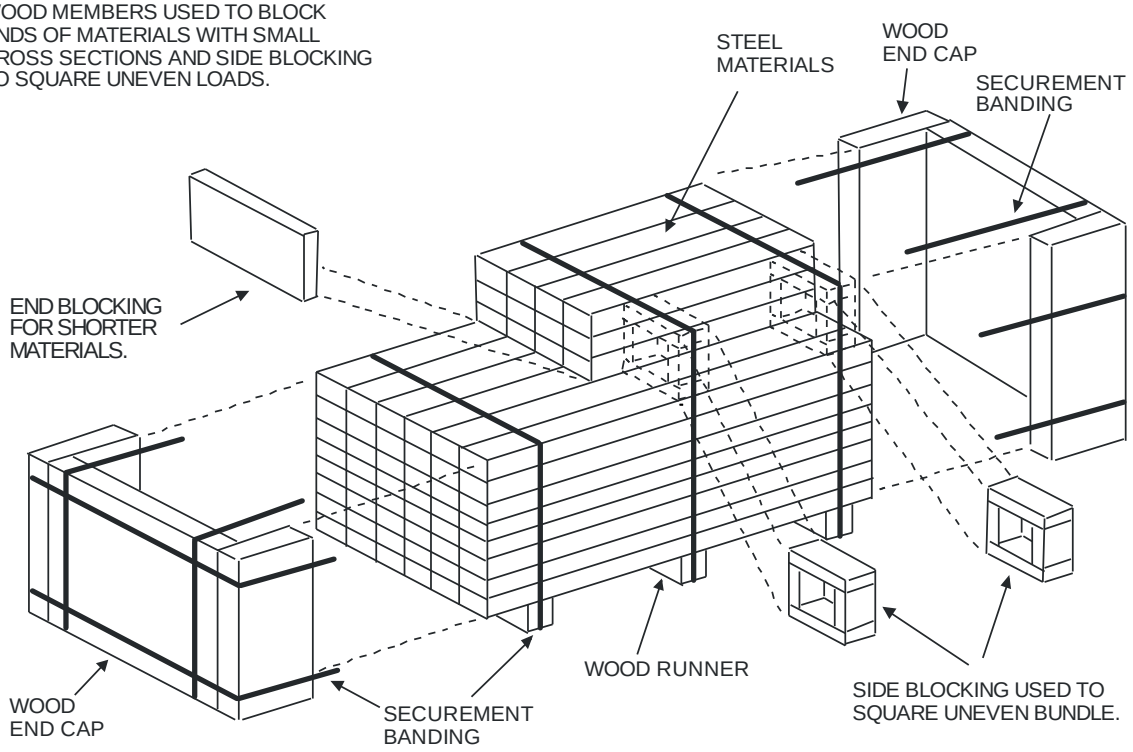
Figure "D" – Steel Bundle with Small Cross Sections and Uneven Lengths & Widths

EXAMPLE # 4

WOOD MEMBERS USED TO BLOCK ENDS OF MATERIALS WITH SMALL CROSS SECTIONS AND SIDE BLOCKING TO SQUARE UNEVEN LOADS.



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11.10 General Reference #10 – Packaging for Six Sigma

11.10.1 Packaging CTQs (Critical To Quality)

11.10.1.1 Product Protection

- Match protection to mode of transport and destination
- Shock & vibration
- Surface protection
- Moisture protection
- Crush protection
- ESD protection
- Corrosion protection
- General Cleanliness
- Temperature Sensitivity

11.10.1.2 Material Handling

- Fork access, 2-way vs. 4-way
- Pallet truck access
- Global equipment compatibility

11.10.1.3 Product Identification

- Clear identification during distribution
- Clear identification for Customs clearance
- Clear identification at customer site and installation

11.10.1.4 Size & Weight

- Efficient transport and distribution
- Efficient delivery
- Efficient weight to volume ratio

11.10.1.5 Efficient Pack & Unpack

- Minimize cycle time
- Minimize number of people required
- Minimize tools required & use only standard tools

11.10.1.6 Reusability

- Reusable vs. disposable
- Cost effective return & reuse process required for reusables
- Secure crates with screws and other easy open fasteners instead of nails

11.10.1.7 Lean

- Efficient presentation for manufacturing use
- Efficient delivery and install at customer site

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11.10.1.8 Stability

- Minimize height of product center of gravity
- Design base footprint & fork access points to match center of gravity

11.10.1.9 Validation Testing

- Global shipping validation testing
- Trial shipments

11.10.1.10 Packaging Materials

- Use standard materials
- Use material suppliers available near packing location
- Use materials already in use at packing location

11.10.1.11 Safety/EHS

- Ergonomic packing and unpacking
- No pinch points
- No sharp edges
- Comply with manual handling weight limits

11.10.1.12 Regulatory Compliance

- Comply with all shipper and receiver local and national regulations
- Comply with all hazardous material transportation regulations
- Comply with special wood import regulations (China, Brazil, United States, Canada, etc.)

11.10.1.13 Environmental Considerations

- No loose fill cushioning/dunnage materials
- Avoid use of EPS (styrene) foam materials
- Comply with receiver material disposal requirements

11.10.1.14 Documentation

- Package design
- Material specifications
- Package assembly

11.10.1.15 Cost

- Total cost analysis (Product/Packaging/Distribution)

11.10.2 Packaging DFSS (Design for Six Sigma)

Package Design Process for New Products

11.10.2.1 Define/Measure

11.10.2.1.1 Determine Package Design Requirements

- Process map package life cycle
- Cause & Effect on influencing variables
- Identify design CTQs and internal Xs (QFD)

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11.10.2.1.2 Determine the Environment

- Modes of shipment
  - *GE Test Guidelines* (Ref: **46-316745**)
  - Field data collected with recorders/sensors
- Handling severity levels
  - *GE Test Guidelines* (Ref: **46-316745**)
  - Field data collected with recorders/sensors
- Storage duration and conditions
  - Data collection from field
- *Size and Weight Limitations for Efficient Distribution & Delivery* (See Section 10.10)

11.10.2.1.3 Determine Product Fragility

- Simulation models (FEM)
- Product data sheets
- Experimental data
  - Experimental modal analysis
  - HALT results
  - Product fragility shock testing

11.10.2.1.4 Package Design Specifications

11.10.2.2 Analyze

11.10.2.2.1 Determine Product Response to Environment

- Failure mode effects and analysis
  - Mechanical environment
  - Climatic Environment
  - Other factors

11.10.2.2.2 Product Redesign Considerations

- Structural Modifications (Concurrent with Product Design)
  - Static response
  - Dynamic response
  - Climatic response

11.10.2.3 Design

11.10.2.3.1 Preferred Package Option

- *Global Packaging Requirements* (Ref: **2100268PRE**)
  - New design concept
  - Modify existing design concept
  - Reuse existing design
- Map package design objectives
- Concept design layouts

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11.10.2.3.2 Structural Design Optimization

- Static Loading
- Shock Response
- Vibration Response
  - Pallet Design
  - Container Design
  - Restraints Design
  - Cushioning Design

11.10.2.3.3 Design to Meet Basic Protection Requirements

- *Global Packaging Requirements* (Ref: **2100268PRE**)
- *GEHC Global Packaging Matrix* (Ref: **Section 11.12**)
- Check List
- Material identifications / selection

11.10.2.3.4 Design for Handling and Transport Cost Minimization

- *Global Packaging Requirements* (Ref: **2100268PRE**)
- *Size and Weight Limitations For Efficient Distribution & Delivery* (Ref: **Section 10.10**)
- Check List

11.10.2.4 Verify

11.10.2.4.1 Design Validation

11.10.2.4.2 Simulated Environment

- *GE Test Guidelines* (Ref: **46-316745**)
  - Random Vibration test
  - Classical shock test
  - Drop test

11.10.2.4.3 Trial Shipments

- Field data recorders / sensors
- Receiver review & feedback

11.10.2.4.4 Quality Plan

- Material evaluation
- Standard operating procedures
- Design of inspection process

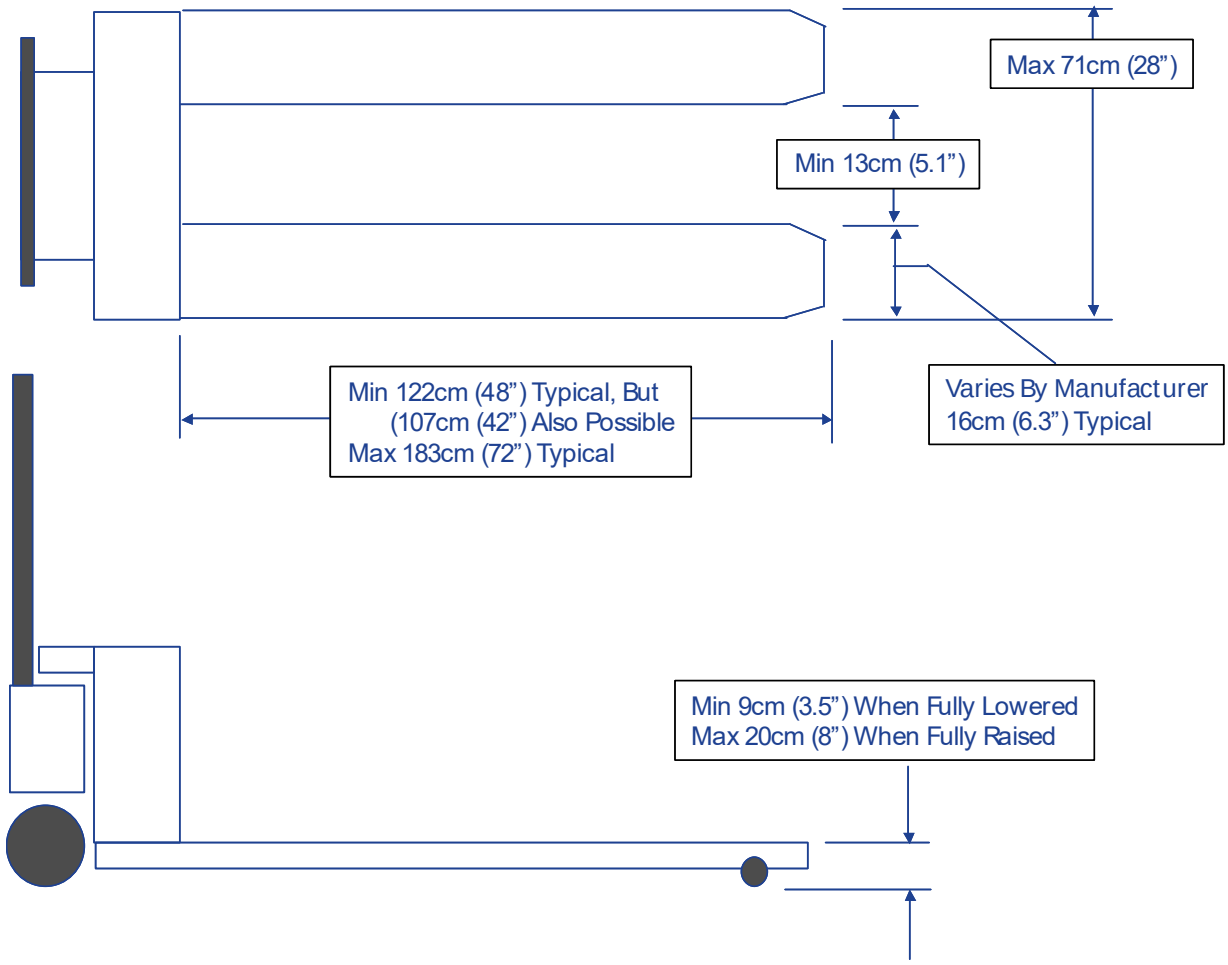
11.10.2.4.5 Production Plan

- Supply schedule
- Vendor capacity
- Competitive pricing
- Storage plan

11.11 General Reference #11 – Typical Pallet Truck Specifications

Other dimensions are possible, but these represent global standards from the major pallet truck manufacturers.

Typical Pallet Truck Specifications



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11.12 General Reference #12 – REACH Reference Information

11.12.1 Articles

"Article means any object which during production is given a special shape, surface or design which determines its function to a greater degree than its chemical composition (REACH, Article 3(3)).

The function of packaging is containment and as such the shape, surface, design or a combination of these elements is normally of greater significance than the chemical composition of the packaging material used. Therefore, most packaging is considered an article under REACH. Producers and importers of articles in the EU generally are subject to two key requirements under REACH:

- Registration of substances intended to be released from articles if the total amount of the substance released exceeds 1 tonne/year.
- Notification to ECHA of candidate list substance present above a concentration of 0.1 % weight by weight if the total amount of candidate list substance in the articles > 1 tonne/year.

In addition, anyone shipping a product in the EU in packaging that contains a candidate list substance above a concentration of 0.1% must provide this information with the shipment along with safe use information. (Article 33)

Due to these requirements, packaging manufacturers need to know/identify what chemicals are in their products, the quantity, and if the substances(s) are for intended release.

If they are not importers of record when buying products in the EU, those who buy substances/preparations/articles contained in packaging are known as “downstream users” under REACH.

A downstream user should contact his suppliers (of packaging or articles/products contained within packaging) and confirm that actors in his supply chain have complied with REACH.

A downstream user of packaging should request information on whether the packaging contains candidate list substances in order to comply with the requirements of Article 33 of REACH.

11.12.2 Intended Release

Both the condition of intended release AND reasonably foreseeable conditions of use must be met before registration of the substances in an article, in this case, packaging, would be required (under Article 7(1) of REACH).

Regarding packaging (as articles) it is not normally the situation that substances are intentionally released from the packaging material in order to fulfill the function of the packaging i.e. containment, and so registration is not required.

Finally substances (in packaging) which are/can be released as a result of wear/tear, due to accidents, or degeneration/aging are not considered (under REACH) as intentional releases, in particular, considering that such types of releases are not necessary or required as an essential part of contributing to the function of the packaging material i.e. containment.

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11.12.3 General Guidance on Packaging (considered as articles under REACH

Questions to consider and help decide your role under REACH with respect to packaging material.

1. *Do you manufacture packaging material?*

   If yes:

   - What substances, if any, do you use in this manufacturing process
   - What quantity of substances do you use?
   - Where do you source your chemicals i.e. EU or as an importer from non-EU?
   - Are these chemicals being registered by your supplier(s)?
   - Do you import (from outside the EU) more than 1 ton per year of these chemicals for your manufacturing process?

2. *Do you buy packaging materials from:*

(a) EU manufacturer? – then you are a downstream user of packaging (i.e. an article under REACH) and need to contact your supplier to find out what substances are contained within the packaging, are they being registered, can they be intentionally released from the packaging material?

(b) Non-EU manufacturer? Then you are an importer of an article and need to find out what substances are contained within the packaging, the quantity of the substance(s) and can they be released intentionally from the packaging, or, has the non- EU manufacturer appointed an Only Representative in which case your role is reduced to that of a Downstream User.

3. *Do you use substances/preparations/articles at your workplace or in your work activity, which are contained/supplied to you in packaging?*

Then you are a downstream user who should contact the supplier to find out what substances are contained in the packaging, what quantity of substance per packaging unit and whether the substances in question can be intentionally released?

Those involved in the manufacturing of packaging do not in themselves manufacture chemicals but, as many packaging manufacturers use chemicals during the process of manufacturing their product, they should be aware of how they may have obligations under the REACH Regulation (EC) No. 1907/2006. Remember you are not required to register articles under REACH but they need to know if the substances within/used in the article are subject to the requirements under REACH.

Examples of the materials and substances used in packaging include: paper, metal, inks, adhesives, glass, coatings, plastics, board, foil, drums etc.

In other words manufacturers of packaging may use chemicals such as inks, adhesives, coatings etc. This can be as an importer if obtaining the chemicals/substances from non-EU source or as a downstream if the source is based within the EU.

Packaging should be assessed independently of the object (substance, preparation and/or article) it contains. Whether the packaging is a carton, box, plastic wrapping, bottle or tin can, it is considered an article under the meaning of REACH and as such therefore the packaging is not part of the substance/preparation or article it contains. It should be noted that there can be various layers of packaging e.g. a plastic wrapper that is then placed inside a box, whereby each layer of packaging is an independent article and so must be considered separately.

11.13 General Reference # 13 – Recommended Wood & Corrugated Box Tolerances

Recommended Wood & Corrugated Box Tolerances					
Box Type	Material	Size		Tolerance	
		inches	mm	inches	mm
Wood Box	Solid Wood & Plywood	≤ 48	≤ 1219	+/- 0.125	3
Wood Box	Solid Wood & Plywood	> 48	> 1219	+/- 0.1875	5
Corrugated Box	Single & Double Wall	≤ 24	≤ 610	+/- 0.0625	2
Corrugated Box	Single & Double Wall	> 24 but ≤ 48	> 610 but ≤ 1219	+/- 0.125	3
Corrugated Box	Single & Double Wall	> 48	> 1219	+/- 0.1875	5
Corrugated Box	Triple Wall	≤ 60	≤ 1524	+/- 0.125	3
Corrugated Box	Triple Wall	> 60	> 1524	+/- 0.25	6

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12.0 Addendum "A" – Barcoded Receiving Label for GE MarketPlace (GXC) Products

GE Healthcare (GEHC)

Advance Shipment Notice Barcode Functionality

Functional Requirements Specification

(FRS)

Version 1 Revision 10
Date Created: May 29, 2001
Date Last Revised: January 2, 2008
Author: William Lewis

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12.1 Introduction

12.1.1 Purpose

The purpose of this document is to specify the feature functionality of the ASN Bar-Code Printing Application.

12.1.2 Overview

At a high level, the ASN Bar-Code Printing Application will be deployed as an additional Custom Application in the current SMP Exchange environment. It will complement the Requirements Marketplace Application. The application will provide SMP supplier's with the capability of printing 4" x 6" labels containing an ASCII code 39 bar-coded ASN number, clear text ship date, ship to address, carrier name and shipper name. Said fields will be populated by user data entry and from the "Requirements" database itself.

12.1.3 Document Conventions

- Introduction
- Operational Scenario
- Functional Requirements
- ASN Bar-Code Label Requirements
- General Requirements
- Operational & Performance Requirements

12.2 Operational Scenario

This section describes, from the user's perspective, what will be experienced when utilizing the ASN Bar-Code Printing Application in a typical situation. Note that the word user in this scenario refers to a supplier. It is also a given that a supplier in the SMP Exchange has permissions that allow them to access the ASN Bar-Code Printing Application.

1. User logs in to the GESMP.

2. User invokes the ASN Bar-Code Printing Application by clicking on the ASN Label application link from the GESMP Message Center menu.

3. The ASN Bar-Code Printing Application prompts the supplier to either enter an ASN/LOT number or click a specific link to list all new ASNs. This screen is entitled the ASN Selection screen. The ASN(s) to be printed is displayed if found, otherwise an error message is displayed and the supplier is allowed to re-enter the ASN/LOT number.

4. If multiple ASNs meet the search criteria entered by the user in the ASN Selection screen, a list of ASNs will be returned and listed for the user in a separate page entitled the ASN Result List screen. If there is only one ASN that meets the search criteria, the user will be forwarded directly to the ASN Details screen.

5. From the ASN Result List screen, the user will have the option of viewing the details of any ASN listed within the result page by clicking on the hyperlinked ASN/LOT number. The ASN display screen is entitled the ASN Details screen.

6. The ASN Details screen will display detailed ASN information at both the header and line item level. Before a barcode can be printed, the supplier must enter the number of cartons in the shipment.

7. At this point, the user may choose to print the bar-code label by clicking the provided link on the ASN Details screen. The label(s) will be displayed in a separate browser window from which they can be printed.

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12.2.1 Scenario Exception

At the discretion of the user, the user may choose to create ASN Barcode Labels using an outside source. The label printed from this source must comply with the specifications as outlined in: Section 12.4.ASN Bar-Code Label Requirements.

12.3 Functional Requirements

This section lists the functional requirements of the ASN Bar-Code Printing Application. The following subsections contain:

- Graphical User Interface: Screen renderings that depict the specific functional requirements. These screen renderings are to be for functional representation only and are not intended to represent the final design. The graphical user interface should follow the same “look and feel”, style, Logos as the Requirements Application 2.0.
- Summary paragraph: Paragraph describing the functional requirement
- Data Element Table: Table containing Element Name, Element Type, and Comments for each of the elements displayed on screen
- Functional Table: Table containing the Inputs, Outputs, Functional points list, and User Privileges for the given screen.

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12.3.1 GESMP Message Center Menu

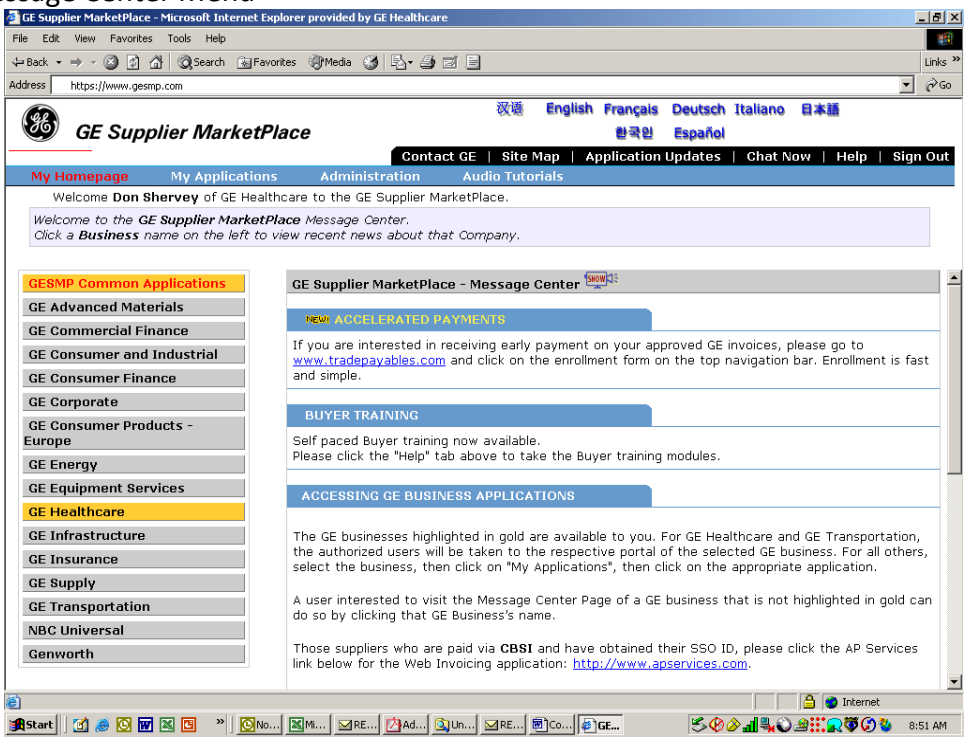

Figure 1– GESMP Message Center

The GE SMP Message Center Menu (Above) is the first screen the user will see when the user logs into the GESMP for GE Healthcare (GEHC). From this entry point, the user may invoke the ASN Bar-Code Printing application.

Data Elements		
Element Name	**Element Type**	**Comments**
ASN Bar-Code Printing	Hyperlink	Link is used to enter the ASN Bar-Code Printing application from the GE SMP Message Center.

Screen Functionality	
Inputs	• None
Outputs	• ASN Selection Screen
Functionality	• This screen is shown when the user logs into the GESMP for GE Healthcare (GEHC) • Displays the list of links available to the user through the GESMP. • The user can select one of the links to view/activate functionality (i.e., user may choose to invoke the ASN Bar-Code Printing application)
User Privilege	Registered Users

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12.3.2 ASN Selection Screen

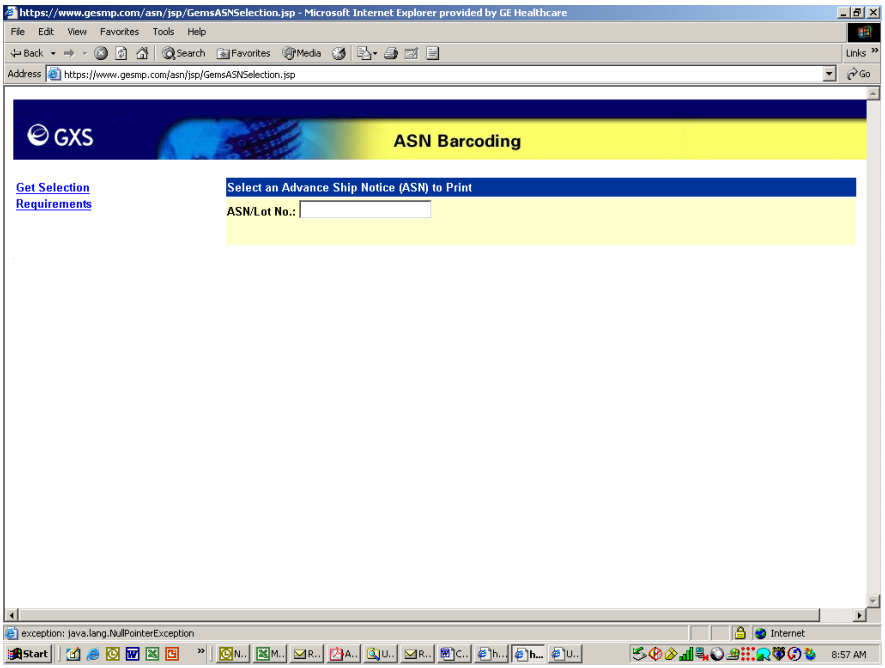

Figure 2 – GESMP Selection Screen

The ASN Selection Screen is the starting point for the Bar-Code Printing application. The user may enter search criteria within this screen to search for a specific Advance Ship Notice (ASN). The user may also enter partial ASN/Lot# numbers along with wildcards to broaden the scope of the search. Instead of the ASN/LOT#, the user may enter either of the following fields: ASN Date, Part #, PO #, and Ship-To-Address. The search will be done on one of the fields only. Once the search has been completed, the user will be presented with the ASN Result List Screen, which will contain a list of ASNs based on the entered search criteria.

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Data Elements		
Element Name	**Element Type**	**Comments**
Get Selection	Hyperlink	Link is used to initiate an ASN search based on the criteria entered within the ASN/Lot# textbox.
Get All	Hyperlink	Link is used to initiate an ASN search for all ASNs available for printing.
ASN/Lot#	Textbox	This field is used to enter the search criteria that will be used to find ASNs to be printed. All searches will be conducted with one criteria only ASN/Lot# or ASN Date or Part # or PO# or Ship-To-Address
ASN Date	Textbox	This field is used to enter the search criteria that will be used to find ASNs to be printed. All searches will be conducted with one criteria only ASN/Lot# or ASN Date or Part # or PO# or Ship-To-Address
Part Number	Textbox	This field is used to enter the search criteria that will be used to find ASNs to be printed. All searches will be conducted with one criteria only ASN/Lot# or ASN Date or Part # or PO# or Ship-To-Address
Purchase Order Number	Textbox	This field is used to enter the search criteria that will be used to find ASNs to be printed. All searches will be conducted with one criteria only ASN/Lot# or ASN Date or Part # or PO# or Ship-To-Address
Ship-To-Address	Textbox	This field is used to enter the search criteria that will be used to find ASNs to be printed. All searches will be conducted with one criteria only ASN/Lot# or ASN Date or Part # or PO# or Ship-To-Address

Screen Functionality	
Inputs	• ASN/Lot No.
Outputs	• ASN Result List Screen
Functionality	• This screen is shown when the user invokes the ASN Bar-Code Application link. • Prompts the user to enter ASN/LOT number. User may also enter partial ASN/Lot# numbers along with wildcards to broaden the scope of the search. • User initiates search by clicking on the “Get Selection” link in the left Navigation Bar. • If the ASN is not found, the screen returns with an error message and the user is allowed to enter another ASN/LOT number. • User can choose to see all ASNs by clicking on the “Get All” link in the left Navigation Bar. • The user may select the exit button to return to the GESMP menu.
User Privilege	Registered Users

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12.3.3 ASN Result List Screen

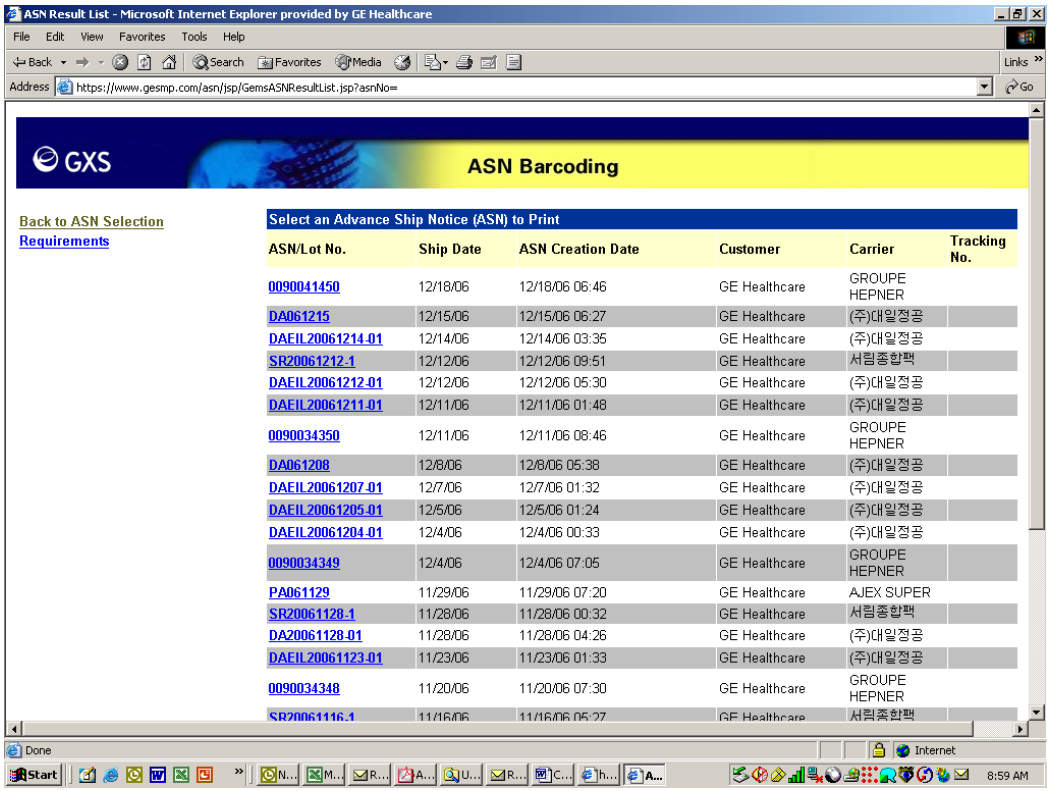

Figure 3 – ASN Result List Screen

The ASN Result List Screen displays a list of ASNs based on the search criteria entered in the ASN Selection Screen. The list contains active ASNs, meaning ASNs representing shipments awaiting a 'Received Notification' from GEHC. ASNs for shipments that have already been received will not be displayed to the user.

The user may then choose to view the details of a specific ASN by clicking on the hyperlinked ASN/Lot# of their choice. By doing so, the user will be presented with the ASN Details Screen, which displays the complete details of the specified ASN.

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Data Elements		
Element Name	**Element Type**	**Comments**
Back to ASN Selection	Hyperlink	Link is used to go back to the ASN Selection Screen where ASN search criteria can be entered.
ASN/Lot#	Hyperlink	Link used to view the details of a specific ASN. By clicking an ASN/Lot#, user will be directed to the ASN Details Screen.
Ship Date	Text	The date on which goods will be shipped.
Customer	Text	The name of customer to whom the goods will be shipped.
Carrier	Text	The name of carrier that will transport goods to customer.
Tracking No.	Text	Tracking number that can be used to track goods with the specified carrier.

Screen Functionality	
Inputs	• None
Outputs	• ASN Details Screen
Functionality	• This screen is shown when the user initiates a search from the ASN Selection Screen. • Displays a list of ASNs based on the search criteria entered in the ASN Selection Screen. • User may click on one of the listed ASN/Lot# to view the complete details of the selected ASN. • Once an ASN/Lot# link has been selected, the user will be presented with the ASN Details Screen. • Only active ASNs will be displayed, meaning ASNs representing shipments awaiting a 'Received Notification' from GEHC. ASNs for shipments that have already been received will not be displayed to the user.
User Privilege	Registered Users

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12.3.4 ASN Details Screen

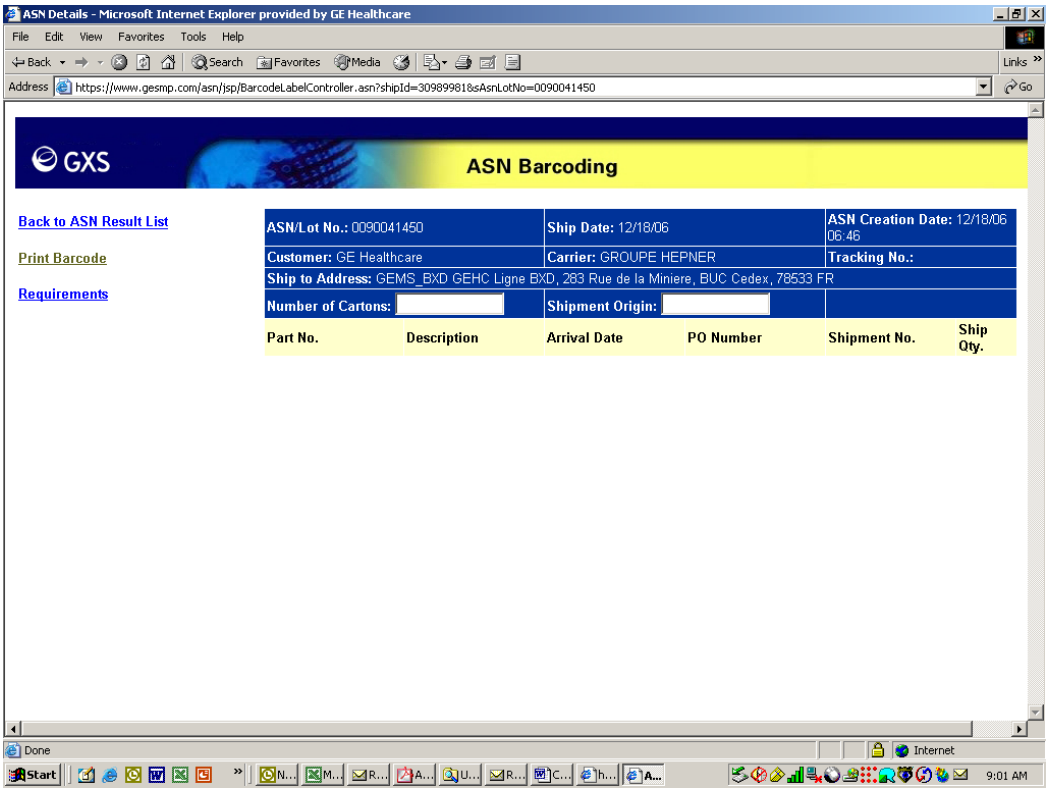

Figure 4 – ASN Details Screen

The ASN Details Screen displays the following defined fields pertaining to the selected ASN:

- ***Header:*** ASN/LOT Number, Ship Date, Customer, Carrier, Tracking Number, Number of Cartons, and Ship-To- Address
- ***For Each Part:*** Part Number, Part Description, Arrival Date, Purchase Order Number, Shipment Number, and Ship Quantity

The user may then choose to print the barcode for the displayed ASN by first entering the number of cartons contained in the shipment into the appropriate fields. Once all the necessary valid user inputs have been made, the user can print the barcode by click the “Print Barcode” link in the left Navigation Bar. This will display the appropriate barcode labels to the user (one for each carton specified in the user input).

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Data Elements		
Element Name	**Element Type**	**Comments**
Back to ASN Result List	Hyperlink	Link is used to go back to the ASN Result Screen where user can choose to see the details of a specific ASN.
Print Barcode	Hyperlink	Link is used to generate a printable barcode based on the details of the displayed ASN.
Number of Cartons	Textbox	This field is used to enter the number of cartons for the displayed ASN. One label for each carton specified will be generated for printing.
Ship-To-Address	Text	The address that goods will be shipped to
ASN/LOT#	Text	The ASN/Lot# of the displayed ASN.
Ship Date	Text	The date on which goods will be shipped.
Customer	Text	The name of customer to whom the goods will be shipped.
Carrier	Text	The name of carrier that will transport goods to customer.
Tracking No.	Text	Tracking number that can be used to track goods with the specified carrier.
Part No.	Text	Part number of a specific part contained in the shipment.
Part Description	Text	Description of a specific part contained in the shipment.
Arrival Date	Text	Arrival Date of a specific part contained in the shipment.
PO Number	Text	PO number specifying which order the specific part was originally ordered on.
Shipment No.	Text	Shipment number specifying which shipment the part belongs to.
Ship Quantity	Text	The ship quantity of the specified part.

Screen Functionality	
Inputs	• Number of Cartons
Outputs	• Barcode Printout Screen
Functionality	• This screen is shown when the user clicks an ASN/Lot# link from the ASN Result List Screen. • Displays a list of items pertaining to the selected ASN. • User can print the barcode for the displayed ASN by entering number of cartons. • The user must enter the number of cartons contained in the shipment into the appropriate field. Any value greater than zero (0) is accepted. The printed representation on the label will follow "CARTON n OF m" format. • Once the "Print Barcode" link has been selected, the user will be presented with the Barcode Printout Screen.
User Privilege	Registered Users

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12.3.5 Barcode Label Example

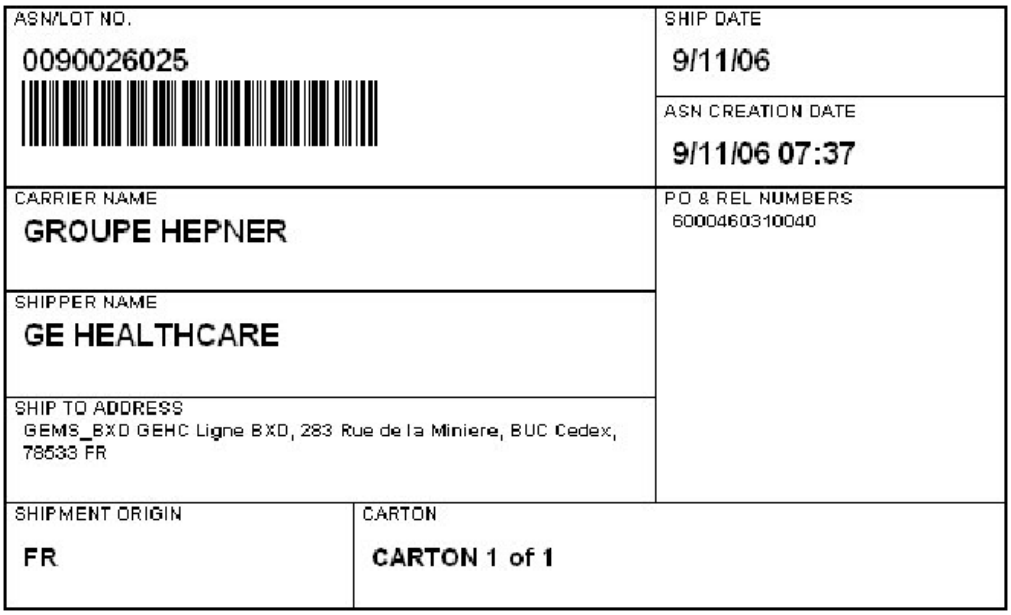

Figure 5 – Barcode Label Example

This example displays a pictorial version of the label that can be printed. This is to be a functional representation only and is not drawn to scale.

Data Elements
See Next Section for specific ASN Barcode Label Requirements

Screen Functionality	
Inputs	• None
Outputs	• Barcode Labels
Functionality	• This screen displays the pictorial version of the label that can be printed.
User Privilege	• Registered Users

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12.4 ASN Barcode Label Requirements

This section describes the requirements specific to the ASN Barcode Label. This is for functional representation and is not drawn to scale.

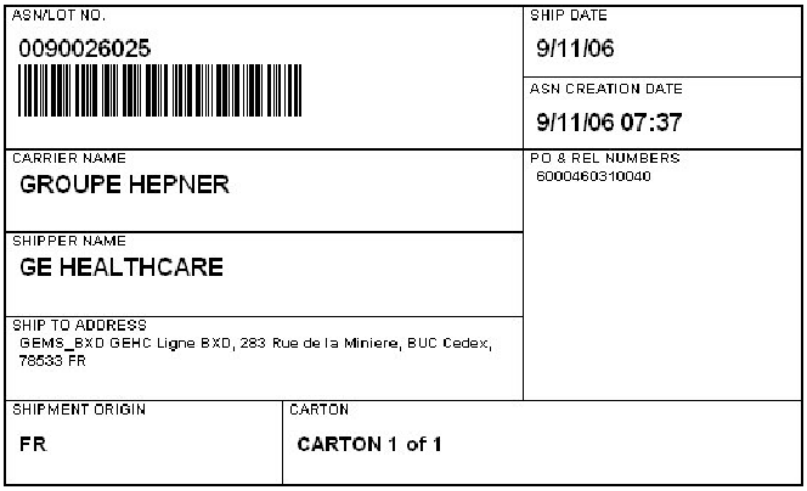

Figure 6 – ASN Barcode Label Example

This table identifies the Data Elements contained within the ASN Barcode Label. For each element, the following are identified: Element Name, Position on the barcode label, the Element Type, and Comments for the description of each element.

Data Elements			
Element Name	**Position**	**Element Type**	**Comments**
ASN_identifier	Top_DB_1	Data Block Identifier	This is the title for the ASN/LOT No. data block.
ASN_value	Middle_DB_1	Data Value	The alpha-numeric representation of the ASN/LOT No.
ASN_barcode	Botton_DB_1	Barcode	The Bar-code representation of the ASN/LOT No.
Ship-Date_identifier	Top_DB_2	Data Block Identifier	This is the title for the Ship-Date data block.
Ship-Date_value	Bottom_DB_2	Data Value	The alpha-numeric representation of the Ship Date value.
Carrier_identifier	Top_DB_3	Data Block Identifier	This is the title for the Carrier data block.
Carrier_value	Bottom_DB_3	Data Value	The alpha-numeric representation of the Carrier value.
Shipper_identifier	Top_DB_4	Data Block Identifier	This is the title for the Shipper data block.
Shipper_value	Bottom_DB_4	Data Value	The alpha-numeric representation of the Shipper value.
Ship-To_identifier	Top_DB_5	Data Block Identifier	This is the title for the Ship-To data block.
Ship-To_value	Bottom_DB_5	Data Value	The alpha-numeric representation of the Ship-To value.
Carton	DB_7	Data Value	Number of cartons contained in the shipment. Any value greater than zero (0) is accepted. The printed representation on the label will follow “CARTON n OF m” format.

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The table below identifies the specific requirements pertaining to the ASN Barcode Label dimensions and standardizations.

Label Requirements	
Requirements	**Description**
Label size	Standard Avery Label Size (Approximate: 3 3/8" by 5 5/8")
Length of Scan Lines	Length of scan lines is the same as used currently I "Requirements" for PART NO.
Standard	AIM Standard for encoding information AIM X5-2 USS-39
Data Blocks	The data areas shall be separated by horizontal thin lines.
Data Identifiers	Each data block shall contain their respective titles in the upper left-hand corner of the data block.
X Dimensions	The "X" dimension of a barcode shall be 10 mil or greater in size.
Quiet Zones	A barcode quiet zone shall be defined as a 0.25-inch or 10 times the "X" dimension of white space before and after the barcode.

12.5 General Requirements

This section describes the ASN Barcode Application requirements that are not specifically stated within the Functional Requirements and Barcode Label Requirements Sections.

General Requirements	
Requirements	**Description**
Internationalization / Localization	• The ASN Barcode Application Internationalization/Localization should follow the SMP Requirements localization MGPP. Localization effort will be addressed separately.
Printing Status	• The status of whether a label for a particular ASN has been printed or not been printed must be known. • The intention is to eliminate confusion at the supplier site, to eliminate duplicate printing or labeling. • The applications must not display ASNs that are no longer active. Only active ASNs will be displayed, meaning ASNs representing shipments awaiting a 'Received Notification' from GEHC. ASNs for shipments that have already been received will not be displayed to the user. • The application must identify ASNs that have printed labels, but have not been received yet.
Label Count	• The count for each label does not need to be stored after printing.
Number of Labels Printed	• There are no constraints on the number of labels that can be printed
Vendor Code	• The ASNs presented to the user during the ASN Result List screen and the ASN Detail screen will be only the Vendor Code that the user is associated with.
One ASN at a time	• The functionality approach is of that of printing/working with one ASN at a time. The user identifies one ASN and prints the labels associated with that ASN. To print another ASN, the user will then choose another ASN and follow the same path.
Label Printing	• As in the 'Requirements' application, two barcode labels will be printable per page.
Printer Dependency	• The ASN Barcode Printing Application does not have any printer dependencies (i.e., in order to print the ASN barcode label(s), no specific printer model is required).

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12.6 Operational & Performance Requirements

12.6.1 Infrastructure

- The ASN Barcode Printing Application must be contained within the same infrastructure and co-exist with the commercial offering of the “Requirements” application.
- The ASN Barcode Printing Application must utilize the same data as the “Requirements” application.
- The system must utilize the same authentication and authorization process as that of the SMP / SMP Exchange.

12.6.2 Availability

The system must be available during normal SMP / SMP Exchange operations times and with similar fault tolerance.

12.6.3 Backups

The system backup operations, routines, and schedule must follow the normal SMP / SMP Exchange process and procedures.

12.6.4 Performance

The ASN Barcode Printing Application must be able to support load time for not to exceed 8 seconds. This includes the Browse, Search, and print Browser Load functionalities; excluding Login functionality.

12.6.5 Support

The ASN Barcode Printing Application Second Tier Support will be conducted by GE Global Exchange Services. The support for the ASN Barcode Printing Application will follow standard GXS SMP Support Escalation Procedures.

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13.0 Addendum "B" – Barcoded Receiving Label For All Non – GE Market Place (GXS) Products

GE Healthcare

Supplier Specification For Receiving Label

REVISION CONTROL INFORMATION

Rev	Date	Name	Sheet	Action
0	12/18/2000	J. Vavrek	All	Initial Release
1	01/19/2001	J. Vavrek	All	Updated labels and shipping configurations. Removed requirement to meet ANSI MH10.8 spec. Added definition section.
2	01/29/2001	J. Vavrek	All	Updated per comments from global tcon on 01/29/2001. Added "X" dimension and "quiet zone" specs and definitions. Added info on multiple PO shipments. Made DFI and the addition of removable mater labels a suggestion not a requirement. Made Quantity whole number requirement to a suggestion.
3	02/08/2001	J. Vavrek	All	Removed requirement on packaging size.
4	05/09/2001	J. Vavrek	All	Added ISO-2 requirement to Country of Origin field. Added Appendix A that contains Country of Origin codes.
5	06/01/2001	J. Vavrek	All	Update label examples to be in portrait layout. Added priority to data fields. Added disclaimer about using mixed containers.
6	06/29/2001	J. Vavrek	All	Removed Country of Origin from document.
7	11/09/2001	J. Vavrek	All	Added Packing Slip number requirement to barcode label. Removed "Preliminary" from title of this document.

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suppliers, agents, and licensees.

Approval is required prior to using barcode shipping labels

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13.1 Forward

Speed and quality are key elements of GE Healthcare's strategy to remain a world-class supplier. The barcode labeling of material received from suppliers is necessary to achieving requisite levels of speed and quality in our receiving and accounts payable transactions. This document details the specifications and approval requirements necessary to develop a GE Healthcare approved barcode shipping label.

The importance of quality barcode shipping labels cannot be overstated. Therefore, GE Healthcare requires that suppliers institute barcode shipping labels beginning January 2001. We expect that our suppliers will have procedures in place to ensure the quality of these labels, just as with any product supplied to GE Healthcare.

This specification is details the minimum requirement for barcode shipping labels. Each plant may incorporate additional requirements if deemed necessary.

Special use of words shall and should. The use of the words shall and should within this document, have distinct meanings. When the word **shall** is used in the text it is meant as a requirement. When the word **should** is used in the text it is meant as a suggestion.

13.2 Key Features

- **Full ASCII code 39** or **128** barcode symbology **shall** be used.
- One removable master label **should** accompany each shipment for each GE Healthcare part number in the shipment. The addition of the removable label serves as a backup if the applied label is unreadable.
- GE Healthcare **shall** approve in writing barcode labels prior to using on shipments.
- Data identifiers **should** be used with the barcode as identified in data field specification.
- Barcode labels **shall** contain NO data errors.
- Remarks **should** be entered at the bottom of the label.
- A single point of contact at the Supplier for all barcode quality problems **shall** be designated.
- Label size may vary from standard 4 inches (102 mm) high by 6 inches (155mm) wide as long as all required information is included and label is pre-approved in writing by GE Healthcare.

13.3 Definitions

Single Container Shipment – A shipment of a single part number under one PO, which is contained in one shipping container.

Multiple Container Shipment – A shipment of a single part number under one PO, which is contained in two or more shipping containers.

Mixed Container Shipment – A shipment of a two or more part numbers under one PO that is contained in one shipping container. Mixed container shipments are much more common in GEHC Service Operation than in GEHC Manufacturing.

AIM X5-2 USS-39 – AIM standard for encoding information into Code 39 barcodes.

Quiet Zone – A pre-defined length of white space before and after a barcode. The quiet zone gives the barcode hardware the ability to determine the length of a barcode for reading purposes.

"X" Dimension – The intended width of the narrow elements of a barcode symbology.

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13.4 Supplier Responsibility

It is the responsibility of the supplier to provide barcoded labels that meet the following specifications. The supplier **shall** be responsible for verifying the accuracy of the label production process and ensuring that the data is current and correct. Prior to implementation, the supplier **shall** submit label samples for approval. Strict adherence to these specifications for shipping/parts identification labels will reduce implementation costs and increase benefits for you and GE Healthcare.

13.5 Barcode Symbology

Barcodes **shall** be Full ASCII code 39 or 128 (Full details are included in AIM X5-2 USS-39) or 128 symbology. The remainder of this section covers additional specific requirements for the GE Healthcare barcode shipping labels.

Human Readable Interpretations:

Each barcoded field on the label **shall** be accompanied by the human readable interpretation and formatted as indicated by the **Exhibit pages** at the back of this document.

Code Configuration:

The four characters ($, /, +, %) of the Code 39 symbology **should** not be used on the shipping parts identification label.

Check Digits:

Check digits **shall** not be added to the barcodes or human interpretation.

13.6 Physical Labeling Requirement

Single Container Shipments: Master Label Required

One barcode label shall be permanently attached to the exterior of the carton or container. *A second barcode label should be removable.* This removable label should be enclosed in the packing slip envelope and may be attached to the back of the packing slip. (Exhibit A)

Multiple Container Shipments: Master Label and Individual Container Labels Required

One master barcode label shall be permanently attached to the exterior of the first container. *A second master barcode label should be removable.* This removable label should be enclosed in the packing slip envelope and may be attached to the back of the packing slip. The quantity on the master label shall be the quantity contained in the entire shipment (Exhibits A and C).

In addition, one permanently attached label shall be affixed to all individual containers in a multiple container shipment. The quantity identified on the individual labels shall be the quantity contained within that particular container (Exhibits B and C).

Mixed Container Shipments: Mixed Master Label and Individual Container Labels Required

One mixed master barcode label shall be permanently attached to the exterior of the first container. *A second mixed master barcode label should be removable.* This removable label should be enclosed in the packing slip envelope and may be attached to the back of the packing slip.

In addition, one permanently attached label shall be affixed to all individual containers in a mixed container shipment. The quantity identified on the individual labels shall be the quantity contained within that particular container. For shipments containing more than 5 mixed items within one container it is recommended that the supplier participate in GE Marketplace, which supports ASN (advance shipping notice) transactions.

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Finally, for shipments that contain multiple mixed containers across multiple POs it is recommended that supplier participate in GE Marketplace to allow for ASN (advance shipping notice) shipments. ASN is a more efficient method of receiving multiple mixed container shipments. 3PLs and ISP providers should be engaged with GE Marketplace.

Each GE Healthcare part number in *any* shipment should comply with the above.

13.7 Size and Materials

Label Size:

The standard label size **should** be 4 inches (102 mm) high by 6 inches (155mm) wide, however the label size may vary with prior written approval by GE Healthcare.

Label Material:

The label material/paper **shall** be white in color with black bar thermal transfer printing providing maximum contrast.

Irregularly Shaped Containers:

Containers that are irregularly shaped, are cylindrical in nature, or have no flat plane surface, **shall** have labels applied to a tag securely attached to the material.

Packaging

The minimum allowable container size **should** be 4 inches (102mm) high by 5 inches (127mm) wide. Containers such as envelopes, bags, etc. **should** have one surface minimum area of 30 square inches bounded by dimensions of 5 inches (127 mm) by 6 inches (155 mm) to ensure that a shipment label can be attached without wrapping around the container. Adequate area must be maintained to allow the printing or the application of a ship to address on all packages, container, or envelopes.

13.8 Data Area Characteristics

The data areas **shall** be separated by horizontal thin lines and **shall** contain their respective titles in the upper left-hand corner of the data block. The one or two letter data identifier **should** be included in the scan-able field. The "X" dimension of a barcode **shall** be 10 mil or greater in size. A barcode quiet zone **shall** be defined as a 0.25-inch or 10 times the "X" dimension of white space before and after the barcode. The order of the data fields on this label **shall** be maintained. Each data field is prefixed with a data order number and these data fields must be arranged in this order on the label to provide the most efficient means to receive the material. See attached diagrams.

Master / Individual Container /Mixed Master Labels
(Exhibits A, B and D)

(1) Number of Boxes: Human readable form only

- A field to identify the number of boxes, containers, or packages in a shipment.
- The master label should indicate the total number of containers in the shipment, the individual label should have the "1 of #" designation. Examples: (BOX 1 of 1) or (BOX 2 of 15).

(2) Purchase Order Number: Human Readable Barcode required Barcode width set to 0.50 inch.

- Data Identifier (K)
- This is the number identified on the Purchase Order (e.g., 303000006).
- Note: The release number cannot be embedded into the PO number.

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(3) Release Number: Human Readable Barcode required. Barcode width set to 0.25 inch.

- Data Identifier: none
- This is the release number associated with a blanket PO. NOTE: This field is required only on blanket Pos.

(4) Part Number: Human Readable Barcode required. Barcode width set to 0.25 inch.

- Data Identifier (P)
- The part number is the part number identified by a particular GE Healthcare Purchase Order. This number shall appear exactly as it appears on the Purchase Order.
- Note: This field is not required on a Mixed Master Label (Exhibit D).

(5) Purchase Order Item Number: Human Readable Barcode required. Barcode width set to 0.25 inch.

- Data Identifier (4K)
- This is the Purchase Order line item number specified on the Purchase Order.
- Note: This field is not required on a Mixed Master Label (Exhibit D).

(6) Quantity: Human Readable Barcode required. Barcode width set to 0.25 inch.

- Data Identifier (Q)
- The quantity on the master label identifies the total quantity in the shipment for a particular GE Healthcare part. The quantity on the individual shipment labels identifies the quantity within each individual container. Quantities listed should be whole numbers only (i.e., 200 not 200.00).
- Note: This field is not required on a Mixed Master Label (Exhibit D).

(7) Unit of Measure: Human readable form only

- Maximum Field Length: 3
- The unit of measure is the three-character unit of measure that represents the Purchase Order unit of measure. This should be included in the Quantity data area to the right of the Quantity barcode. The unit of measure should match the Oracle ERP unit of measure definitions.
- Note: This field is not required on a Mixed Master Label (Exhibit D).

(8) Packing Slip Number: Human Readable Barcode required. Barcode width set to 0.25 inch.

- This is the packing slip number as generated by the supplier.

(9) Revision Number: Human readable form only

- A field identifying the revision level or number of the part contained in the shipment.
- Note: This field is not required on a Mixed Master Label (Exhibit D).

(10) Suppler Name, Address Section and Comments: Human readable form only

- This is the Suppler Name, Address Section and Comments in human readable form.

(11) Supplier Use: Human readable form only

- Field can be filled in with text. Examples: explanation of partial release material or supplier's part number when naming convention is different from GE Healthcare's.

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13.9 Approval Process

The process to follow for approval of barcode labels is:

1. Supplier completes request for barcode shipping label approval (below).

2. Forward request for approval with samples using actual order data to GE Healthcare- *requesting GEMED plant*.

3. The request will be evaluated by GE Healthcare. Notification will be made to supplier as to label approval or areas for correction.

4. Receipt by the supplier of approval is authorization for that supplier to begin shipping with barcode shipping labels. Shipments will include packing slips as well as barcode labels.

5. Shipment to all the following GE Healthcare locations are presently included under this document:

- GEHCPRO S.A. de C.V.

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13.10 Request for Barcode Shipping Label Approval

(To be completed and returned by Supplier)

Supplier Name: _____

Supplier Address: _____
_____
_____

	Name	Phone	FAX
Supplier Barcode Contact:	_____	_____	_____

Please complete the following question:
Are you currently using barcode applications? **Yes/No**

Specific Instructions

Please submit at least 3 sample barcode labels for each label type you will use: e.g. Master Labels, Mixed Master Labels, and Individual Box Labels. ***These labels should be representative of the labels you will use (material, printer).*** *A copy of the packing slip that reflects actual release status shall accompany master barcode labels.*

Do not start using barcode label shipments until written GE Healthcare approval is received.

Please submit labels to:

Barcode Representative
Plant Name
Barcode Label Compliance

Plant Address

Add Barcode Representative's phone number and email address here.

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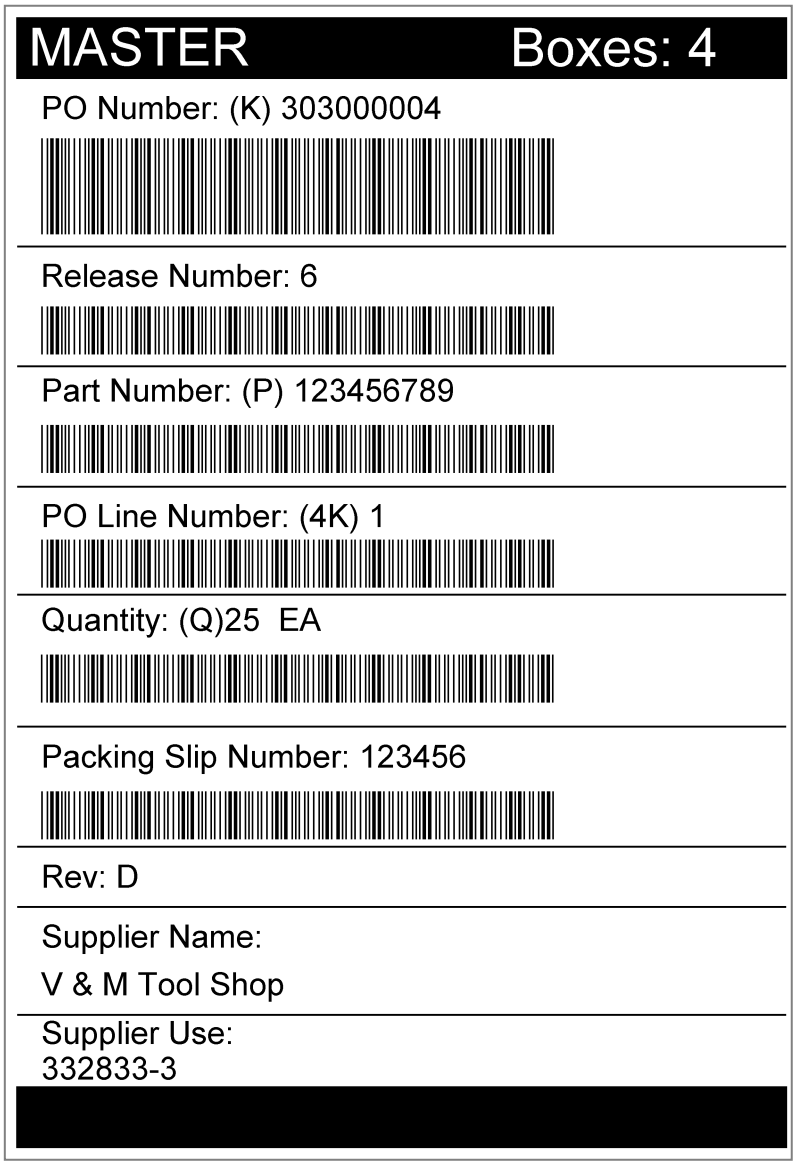
13.11 Exhibit A – Master Label Example



Fields/Barcodes required

Quantity = Total shipment

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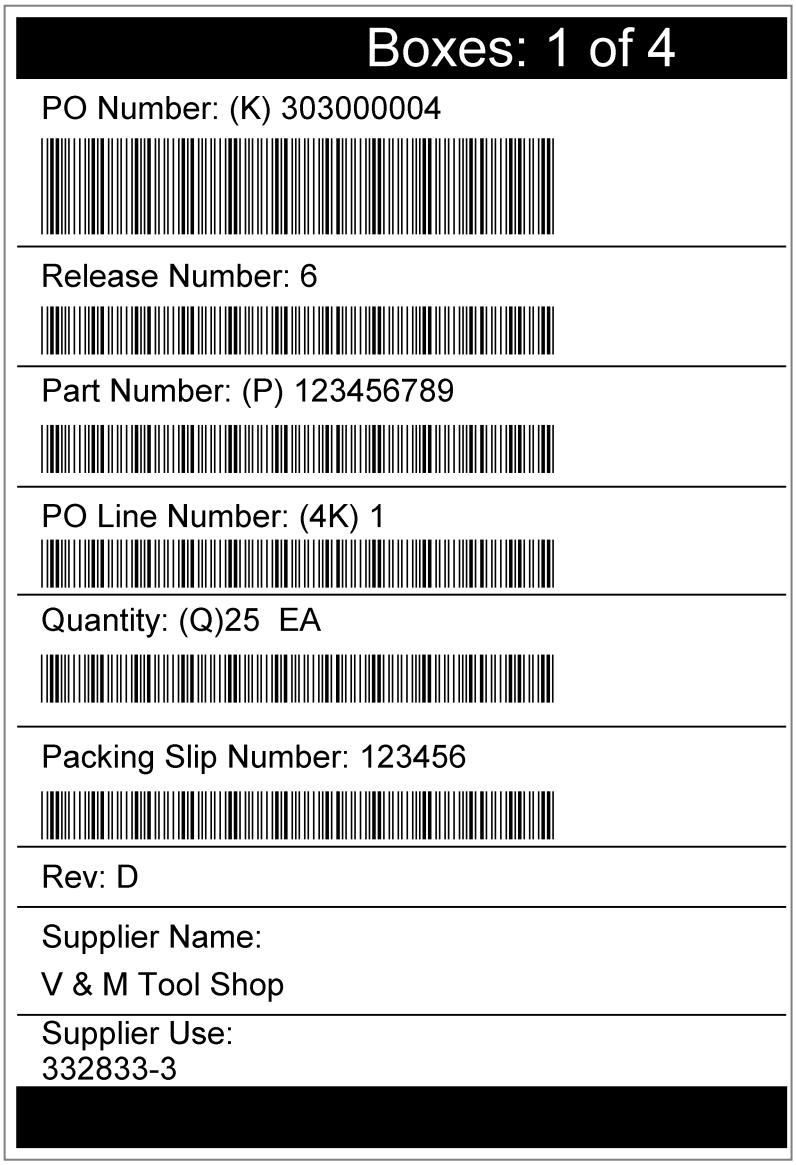
13.12 Exhibit B – Individual Container Label Example



Fields/Barcodes required

Quantity = Quantity per Container

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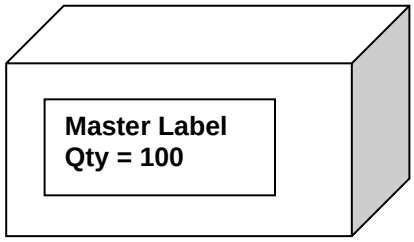
13.13 Exhibit C Label Placement

13.13.1 Single Container Shipments

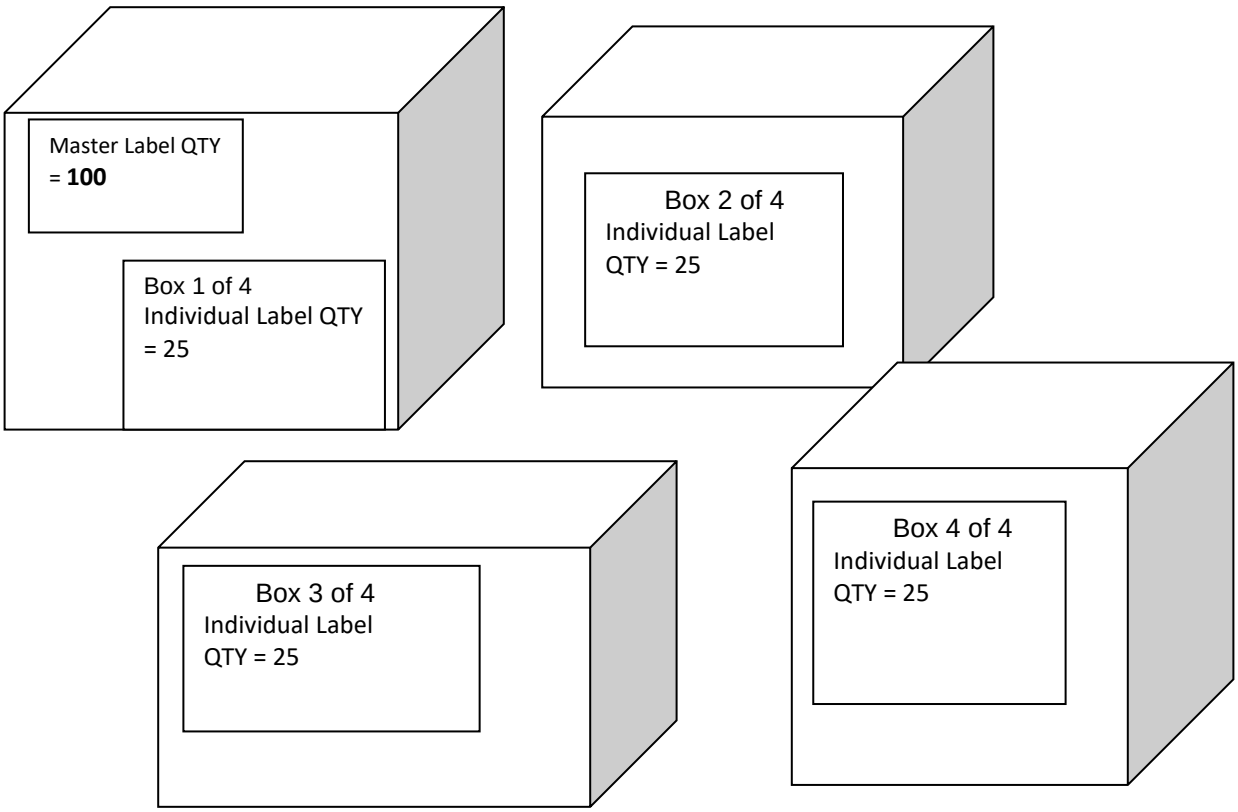
One Box Shipment requires one Master Label



13.13.2 Multiple Container Shipments

Master Label details the total shipment quantity

Individual Container Label details the box quantity



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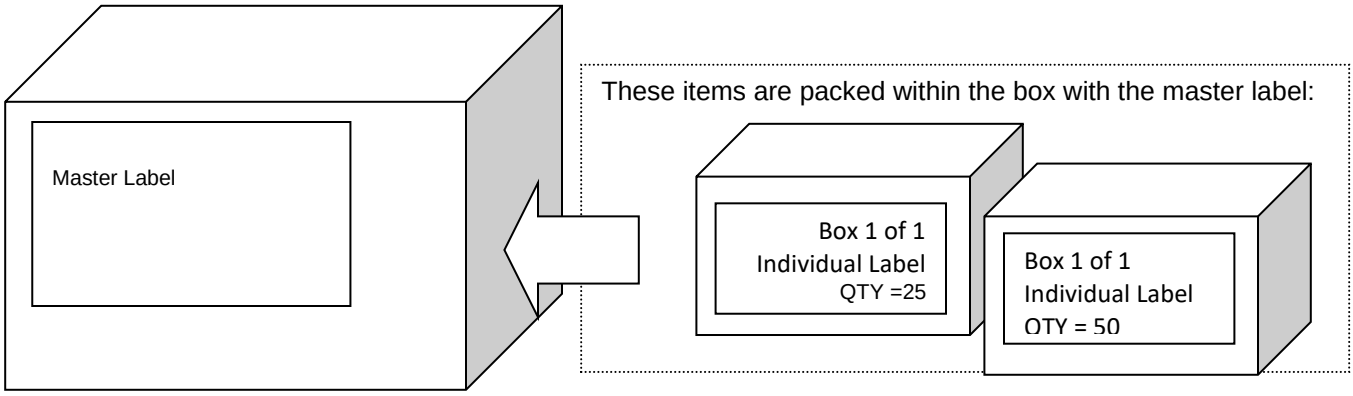
13.13.3 Mixed Container Shipments

Master Label details the PO Number for shipment.

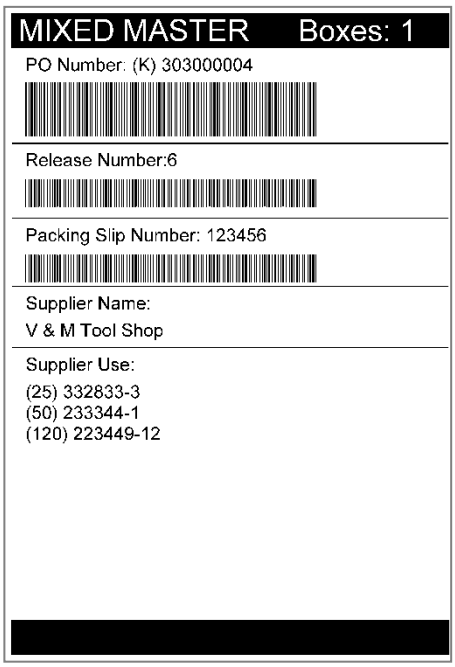
Individual Container Label details the part number and item quantity.

For this example: 2 different part number shipments are enclosed in one box.



13.13.4 Exhibit D – Mixed Master Label Example

Fields/Barcodes required



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14.0 Addendum"C" – Global Parts and Repair Solutions Package Seal Procedure

All of the material in Addendum "C" has been incorporated into

Section 9: Special Packaging Requirements for Service Parts.

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Appendix A List of Symbols, Abbreviations, Definitions, Acronyms

Active Label

A label that undergoes a physical change indicating that a specific action has taken place (i.e., Tiltwatch Labels, Humidity Indicators, etc.)

ATC

Advanced Technology Center – part of the Healthcare, Imaging Technology Organization

ASN Bar-Code

At a high level, the ASN Bar-Code Printing Application will be deployed as an additional Custom Application in the current SMP Exchange environment. It will complement the GE Marketplace Requirements Application. The application will provide SMP suppliers with the capability of printing

4" x 6" labels containing an ASCII code 39 bar-coded ASN number, clear text ship date, ship to address, carrier name, and shipper name. Said fields will be populated by user data entry and from the "Requirements" database itself.

Controlled Ocean Container Shipment

A shipment where the ocean container is loaded in a controlled environment, either by the shipper or their agent, and is not broken until it arrives at the final destination, where it is unloaded in a controlled environment by the receiving pole or their agent.

Finished Good Product

Product that can be used on a manufacturing production line, but is more typically shipped direct or reshipped, without any repackaging, to customers as a complete system or component of a system. Sourced by GEHC Global Manufacturing Operation.

GEHC

General Electric Healthcare

GE Marketplace

GE Marketplace is a GEHC Global Supplier Center (Extranet) base application that allows demand data collaboration between GEHC and its Suppliers. The application will be used in conjunction with the Genesis platform to communicate Forecasts, Purchase Orders, and Receipt information. Suppliers will then input Acknowledgements, Promise Details, Special Comments, and Shipment Information. Suppliers will also use the application to create Advanced Shipment Notice (ASN) Bar-Code Labels. Users (GEHC and Suppliers) collaborating with this tool will conduct a real-time exchange of demand data/information.

Good Receiving Point

The country of destination and all phases included in the distribution routing are expected to have good, safe handling and transportation systems to move the product from the point of entry to the final customer site.

HCS

Healthcare Systems

Individual Pack

Products packaged with a quantity of one item (part number) in one package.

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Individual Package

A product that is packaged and labeled in the final packaging configuration which will allow it to be shipped directly to the final customer with no repackaging. The package is labeled correctly with all required documentation on the outside of the package, to prevent the need to open the package when received by a GEHC distribution facility.

Individual Pack, Single Trip Containers

Products packaged with a quantity of one item (part number) in one package. The package is not designed for reuse.

Individual Pack, Double Trip Containers

Products packaged with a quantity of one item (part number) in one package. The package must be designed to protect the product for the initial shipment to the end user, and also, the return shipment of the same or a similar product to the supplier.

Large Product

Products weighing greater than 1000 kg (2200 lbs) that typically require special packing and handling considerations

Line Use Product

Product being shipped to a GEHC manufacturing facility, specifically for use on a manufacturing line. Not intended for reshipment to a GEHC customer. Sourced by GEHC Global Manufacturing Operation.

Medium Product

Products weighing greater than 32 kg (70 lbs), but less than or equal to 1000 kg (2200 lbs), that usually require mechanical handling. These products usually ship in a crate or large box with wood runners and must provide access for fork trucks, hand trucks, or other mechanical handling equipment.

Milk Run

A closed loop trucking process that moves GEHC products and components between Suppliers and GEHC Manufacturing facilities and Distribution Centers

Minimum Pack

When a product ships with very little protective packaging. The package usually consists of a light wrapping of plastic film, cushioned paper, bubble wrap, or other similar material, with some means of handling provided. The product can have built-in wheels, built-in fork openings, be attached to a shipping dolly, or be secured to a wood base.

Multi-Pack

Products packaged with more than one item (all the same part number) in one package.

Multi-Pack, Single Trip Containers

Products packaged with more than one item (all the same part number) in one package. The package is not designed for reuse.

Packaging

All products made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods, from the producer to the user or the

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consumer. Non-returnable items used for the same purpose shall also be considered to constitute packaging. Packaging consists only of:

(a) sales packaging or primary packaging, i.e., packaging conceived so as to constitute a sales unit to the final user or consumer at the point of purchase;

(b) grouped packaging or secondary packaging, i.e., packaging conceived so as to constitute at the point of purchase a grouping of a certain number of sales units, whether the latter is sold as such to the final user or consumer or whether it serves only as a means to replenish the shelves at the point of sale; it can be removed from the product without affecting its characteristics;

(c) transport packaging or tertiary packaging, i.e., packaging conceived so as to facilitate handling and transport of a number of sales units or grouped packages in order to prevent physical handling and transport damage. Transport packaging does not include road, rail, ship and air containers, etc.

Passive Label

A label that provides written information only (i.e., “Fragile”, “Handle with Care”, “This End Up”, etc.)

Poor Receiving Point

The country of destination, or any phase included in the distribution routing, is known or is expected to have a rough, unsafe handling and/or transportation system to move the product from the point of entry to the final customer site, requiring extra protection from the product’s packaging.

Processed Wood

Wood based material constructed using glue, heat, and pressure, or any combination thereof. Plywood, particleboard, and corrugated fiberboard are examples of processed wood.

Service Part

Product shipped to customers for repair or replacement of existing systems. Sourced by GEHC Global Service Parts Organization.

Raw Wood

Basic wood boards and lumber that have been cut from the wood of the original tree

“Repairable” or “Exchange Part”

A part that is repaired by a GEHC repair source, or a repair supplier, for placement into the parts network. The part is repaired on a return and exchange program; a rebuilt part is sent to a Field Engineer, and the defective part (RG) is returned for credit, to be rebuilt.

Reusable/Returnable Containers

Containers specifically designed to be returned to the supplier for reuse. Applies to containers designed for both single and multiple items.

“RG” (Returned Good)

A defective Service Part returned from the field

Small Products

Products weighing 32 kg (70 lbs.) or less that can usually be packed and handled manually by one person. A means for mechanical handling may be provided for convenience, but is not required. Usually shipped in wood or

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corrugated boxes and often consolidated with other small packages in a larger wood or corrugated box for shipment. Often shipped using overnight carriers where rough handling conditions can be expected.

Solid Wood & Non-manufactured Wood

Wood that has not been processed or changed from its natural state. Lumber and boards are an example of solid wood. (Note: In this document, Solid Wood and Non-Manufactured Wood are used interchangeably.)

Specialty Packaging

Packaging designed and engineered for a specific part. These requirements will be defined on the part drawing or purchase specification and take precedence over the general requirements of this guideline.

Transport Packaging

Packaging conceived, so as to facilitate handling and transport of a number of sales units or grouped packaging in order to prevent physical handling and transport damage. Transport packaging does not include road, rail, ship, or air containers.

VCI

Vapor Corrosion Inhibitors

WVTR

Water vapor transmission rate

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Appendix B Example/Reference Documents

The "Industry Standards and Documents" (Section B.1) or "Other GEHC Standards and Documents" (Section B.2) referenced in this document are to provide background information or to identify the source of the statements. Since referenced documents may provide information on multiple subjects, only the subject(s) referenced in the body of this document are considered relevant.

This document is based on the revisions listed below. At the time this document was released, the revisions indicated were valid. All Standards are subject to revision; therefore, the user of this document is encouraged to investigate the possibility of applying the most recent revisions of the Standards indicated below. Subsequent revisions will be considered but are not required.

B.1 Industry Standards and Documents

Reference	Description	Date
69/493/EEC	European Economic Community Directive on Crystal Glass	1998
94/62/EC	European Packaging Directive – Packaging and Packaging Waste	2002
97/129/EC	European Packaging Directive – Packaging Markings	1997
(EC) 1272/2008	Classification, Labeling, and Packaging of Substances and Mixtures	2009
(EC) 1907/2006	Regulation of the European Union regarding Registration, Evaluation, Authorization and Restriction of Chemicals	2006
2009/251/EC	Dimethylfumarate (DMF) Testing	2009
ANSI/AAMI/ISO 11607-1	Packaging for Terminally Sterilized Medical Devices – Part 1: Requirements for Materials, Sterile Barrier Systems, and Packaging Systems	2006
ANSI/AAMI/ISO 11607-2	Packaging for Terminally Sterilized Medical Devices – Part 2: Validation Requirements for Forming, Sealing, and Assembly Processes	2006
ASTM D4169	Standard Practice for Performance Testing of Shipping Containers and Systems	2009
ASTM 5582	Standard Test Method for Determining Formaldehyde Levels from Wood Products Using a Desiccator	2006
EN13427	Packaging - Requirements for the use of European Standards in the Field of Packaging and Packaging Waste	2004
EN13428	Packaging - Requirements Specific to Manufacturing and Composition - Prevention by Source Reduction	2004
EN13429	Packaging - Reuse	2004
EN13430	Packaging - Requirements for Packaging Recoverable by Material Recycling	2004
GB 18455-2001	People's Republic of China National Standard - Packaging Recycling Marks	2001
HANDBOOK 252	US Dept. of Agriculture – Wood Crate Design Manual	N/A
ISO 780	Packaging – Pictorial Marking for Handling of Goods	1997
ISO 1043	Plastics – Symbols and Abbreviated Terms	2001
ISO 11469	Plastics – Generic Identification and Marking of Plastics Products	2000
ISO 7000	Graphic Symbols for Use on Equipment	2004
ISPM 15	Regulation of Wood Packaging Material in International Trade	2009
JIS Z 1403	Construction of Wooden Framed Boxes for Packing	2012
MIL B 131 H	Barrier Materials, Water Vapor Proof, Grease Proof, Flexible, Heat-sealable	1991
PPP-B-621	Federal Specification: Boxes, Wood, Nailed, and Lock Corner	2006
UL 60601-1	U.S. National Standard for Safety Testing Electrical Medical Devices	2007

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B.2 Other GEHC Standards and Documents

Reference	Description	Rev
46-316745	Mechanical Environment Test Standard	12
2252595PRE	Thermal Environment Test Guideline	5
5215680GSP	Supplier Product Locator Card Procedure	9
5396068GSP	GEHC REACH Requirements for Suppliers to GEHC Legal Entities	5
5396068-2GSP	REACH Declaration Letter	1
DOC0041803	2013740-149 CP-1035 China Product and Package Label Requirements	1
DOC0062044	China Labeling and Language Requirements and Procedure	7
DOC0269245	GEHC Position Statement on China RoHS Labeling	14
DOC0359234	AME Lab Environmental Testing Template	6
DOC0552387	Service Part Good to Stock Label	2
DOC0552389	Service Part Field Service Return Label	2
DOC0552390	Service Part Defective Part Return Label	2
DOC0552391	Service Part Recycling Return Label	2
DOC1060518	GEHC Venezuela Labeling Requirement	2
DOC1141717	GEHC Packaging Req. Document for EU Directive 94/62/EC	2
DOC1220258	GEHC Functional Req. for Compliance with EU Directive 94/62/EC and Amendments	1

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