



Doing Business With Harley-Davidson, Packaging

Original Equipment Manufacturing and Assembly Operations
Last Update: July 2015

INTRODUCTION

This document details the minimum acceptable packaging requirements for purchased components used at Harley-Davidson's Manufacturing and Assembly facilities. The principal objective of these requirements is to guarantee part quality, maximize production efficiency, and ensure safety while minimizing overall packaging and transportation costs.

There may be additional packaging requirements for the Harley-Davidson Parts & Accessories. The majority of these requirements are addressed in this document. More detailed specifications are presented in the "Packaging and Labeling for Inbound Parts & Accessories" document on H-DSN.

Suppliers interested in more information regarding these requirements, or seeking technical assistance should contact their Harley-Davidson Purchasing representative who can direct them to the appropriate Packaging resource.



Doing Business With Harley-Davidson, Packaging
Original Equipment Manufacturing and Assembly Operations
Last Update: July 2015

TABLE OF CONTENTS

PACKAGING PART QUOTING 3

RETURNABLE PACKAGING..... 4

EXPENDABLE PACKAGING..... 7

PACKAGING SAFETY AND ERGONOMICS 9

PALLETS 9

LABELING AND IDENTIFICATION 11

HAZARDOUS MATERIALS 11

CONTAINER EXAMPLES 12



Doing Business With Harley-Davidson, Packaging

Original Equipment Manufacturing and Assembly Operations
Last Update: July 2015

PACKAGING PART QUOTING

Clear communication of packaging information prior to suppliers' quoting process is essential to provide early visibility to solid costs and avoid cost issues later in the development process.

The decision to use expendable or returnable packaging for incoming original equipment (OE) parts takes into account many factors such as safety, quality and cost. To aid in the decision-making process, suppliers should quote the part cost using both expendable and returnable packaging, and record the container size and density assumptions made while quoting.

Some parts shipping into H-D may ship in bulk containers and require expendable dunnage to insure the parts are not damaged during transit. Suppliers should be sure to include in the quote new dunnage for every shipment to H-D. Contact the appropriate H-D Packaging Engineer if there is any question regarding the need for expendable dunnage.

Part quotes that involve a multiple tiered supply chain should quote the part cost with the assumption that any Harley-Davidson returnable packaging is used only for the finished part shipment from the final point of value-added processing to the Harley-Davidson designated facility.



Doing Business With Harley-Davidson, Packaging

Original Equipment Manufacturing and Assembly Operations
Last Update: July 2015

RETURNABLE PACKAGING

Returnable packaging is considered anything that is used to ship a part multiple times. Harley-Davidson is responsible for the design, development, and implementation of returnable packaging.

Returnable Container Design Process:

The Harley-Davidson Packaging Engineer will develop concepts, drawings and samples as needed for review with the appropriate internal and external stakeholders. Following final approval, container system quantities will be determined and purchased by Harley-Davidson.

Returnable Packaging Sketch Forms:

The returnable packaging sketch form is developed by Harley-Davidson Packaging Engineers. It is a tool used to communicate the concept and/or final packaging plans to both internal and external stakeholders. Supplier input and approval will be solicited during the approval process.

Container System Sizes:

Determining the number of returnable containers to purchase is an important part of the process when implementing returnable systems. To ensure process discipline, value stream maps are used to determine the number of containers to purchase. The part supplier will be asked to actively participate in the development and review of value stream maps for all new returnable designs.

The goal of the value stream map is to define all internal and external process requirements, and to minimize the quantity of returnable containers required to support delivery of parts to Harley-Davidson.

- Minimizing the quantity of returnable packaging in the system is a conscious effort to control total cost and promote lean manufacturing.
- Harley-Davidson provides returnable packaging for **finished goods only**.
- Suppliers must not use Harley-Davidson returnable packaging for their internal processes, multi-tiered supply chains CKD or P&A without written authorization of H-D Packaging Engineer, Material Planner and SBA.
- Returnable packaging is not to be used for bank builds



Doing Business With Harley-Davidson, Packaging

Original Equipment Manufacturing and Assembly Operations
Last Update: July 2015

Variables of a value stream map may include, but are not limited to the following:

- Days in inventory at the supplier
- Days in transit from supplier to H-D
- Days in inventory at H-D
- Days allocated for return/sorting
- Days in transit from H-D to supplier
- Days for flexible manufacturing (Surge)

Two additional variables required to calculate the total number of returnable containers are:

- Part's average daily usage (ADU)
- Container pack quantity (CPQ)

Once this information is defined the following formula is used to calculate the system requirements:

$(ADU/CPQ) \times \text{Total Value Stream Days} = \text{Returnable Container System Size}$

Volume Rate Increases:

As daily production volumes change, the level of packaging in the system may need to be adjusted to reflect those volume changes. It is the responsibility of Harley-Davidson Packaging to make these calculations and determine the required adjustments.

If the appropriate H-D supplied returnable packaging is not available, the supplier is required to ship in the approved designated back-up expendable packaging. Plant Packaging Engineer Approval is required prior to shipping in the expendable backup packaging.

Build Events:

After returnable packaging design concepts have been approved by the stakeholders, packaging will be ordered and shipped to the supplier. This packaging must be used to ship the parts to the build events as directed by the H-D Packaging Engineer. The H-D Packaging Engineers will use this to evaluate the designs and make any necessary modifications before production packaging is purchased.



Doing Business With Harley-Davidson, Packaging

Original Equipment Manufacturing and Assembly Operations
Last Update: July 2015

Container Maintenance:

Both the supplier and Harley-Davidson are responsible for maintaining the integrity of returnable packaging. Suppliers are responsible for maintaining the containers cleanliness and ensuring product is shipped in clean, undamaged packaging.

- It is the supplier's responsibility to notify Harley-Davidson of any damaged containers received within 24 hours of receipt.
- The supplier may not scrap packaging without prior approval from the appropriate Harley-Davidson packaging representative.
- Harley-Davidson is responsible for expenses incurred for the repair or replacement of returnable packaging caused by normal wear and tear.
- Cost of repairs which are required due to accidents or misuse will be the responsibility of the party causing the damage.

Items that are to be checked when inspecting returnable containers (including but not limited to):

- Cracks in the corner joints
- Missing or broken access gate hinges
- Extensive damage to the container base
- Broken off pieces
- Pierces or cuts
- Bowing sidewalls

Obsolete Returnable Packaging:

Harley-Davidson is responsible for the disposition of all obsolete returnable packaging materials. Suppliers who have any obsolete dunnage or containers at their facility should contact their appropriate Packaging representative. Disposition of Harley-Davidson assets is strictly prohibited without prior authorization.

Returnable Packaging Backup

Suppliers will establish and maintain expendable backup packaging that must be used in the event that returnable packaging is not available.

- Package part quantity of the backup expendable must match the returnable package.
- The expendable backup packaging must occupy the same footprint as the returnable pack on any dimension.
- The expendable back-up design is required to be completed six (6) weeks prior to the start of production.
- Proper documentation of backup packaging is required and must be completed by filling out the Expendable Packaging Sketch Form. <http://www.h-dsn.com/genbus/packaging.jsp>
- Any exceptions must be approved by the Harley-Davidson Packaging Engineer at the using plant prior to shipment.



Doing Business With Harley-Davidson, Packaging

Original Equipment Manufacturing and Assembly Operations
Last Update: July 2015

Production parts that are designated to be shipped in returnable containers may not be shipped in expendable containers without prior communication from the appropriate Harley-Davidson Packaging representative and Material Planner. Suppliers are not allowed to miss a shipment because returnable packaging is not available. Suppliers will be responsible for the cost of any backup expendable packaging used as replacement unless the appropriate Harley-Davidson Packaging representative waives them of that financial responsibility. Failure to communicate with the onsite H-D Packaging Engineer, and Material Planner, will result in the supplier being held responsible for the cost of the expendable packaging used.

EXPENDABLE PACKAGING

The Harley-Davidson part supplier is responsible for the design, development, and implementation of all expendable packaging. Final approval for all expendable packaging is required by H-D Packaging Engineers. The expendable packaging sketch form is used to communicate packaging plans between all internal and external stakeholders. The form is used to communicate the concept and/or final packaging plans, as well as the primary and backup packaging plans. Suppliers are required to submit expendable sketch forms no later than 6 weeks prior to the Build Event specified by the H-D Packaging Engineer.

The H-D Development Purchasing Analysts will send an expendable sketch form, and instructions for filling out that form, via email for each part packed into expendable packaging. The H-D Packaging Engineer copied on the email becomes the point of contact for the form and the packaging information from that point forward. It is the responsibility of the supplier to complete the form per the instructions provided and return the form **directly** to the H-D Packaging Engineer.

Expendable Primary:

It is the responsibility of the supplier to design and develop the primary expendable packaging.

- Expendable packaging design must provide adequate protection to ensure safe delivery of packaging and components to Harley-Davidson free of damage.
- It is important for the supplier to begin the packaging design process early in the part development cycle.
- The part supplier is directly responsible for the performance of the final expendable packaging design.
- Multiple part numbers cannot be packaged in the same container.
- Expendable packaging cannot exceed 35 lbs.
- Suppliers are required to ship parts in the production intent expendable packaging as proposed on the expendable sketch form submitted no later than 6 weeks prior to the build event. H-D Packaging Engineers will evaluate the packaging during the build event for revisions or final approval.
- If needed, blank expendable sketch forms can be found on H-DSN: <http://www.h-dsn.com/genbus/packaging.jsp>



Doing Business With Harley-Davidson, Packaging

Original Equipment Manufacturing and Assembly Operations
Last Update: July 2015

Expendable Design Guidelines:

The following design guidelines should be used when developing expendable packaging for shipment into the Harley-Davidson.

Expendable Container Sizes:

The following table contains nine preferred container sizes for OE parts being delivered to Harley-Davidson assembly and/or manufacturing facilities. These box sizes cube out Harley-Davidson standard pallet dimensions: Harley-Davidson highly recommends the use one of these box sizes.

LENGTH Outside Dimension (inches)	WIDTH Outside Dimension (inches)	HEIGHT Outside Dimension (inches)
6	6	6
12	7	5
12	15	5
12	15	9
24	15	7
24	15	15
24	22	11
32	30	25
45	48	25

Factors in Selecting Container Size:

- Part Dimensions – best fit container to part
- Part Weight – ergonomic limit for hand held boxes is 35 pounds
- Part Characteristics – partition cells, wrap, and/or cushion material as required
- Parts per Container

Dunnage for Expendable Packaging:

For parts that are non-cosmetic, bulk packing is acceptable and no internal dunnage is required. For cosmetic or fragile parts the use of expendable dunnage should be used only as required to protect the quality of production parts. Bagging, wrapping, masking and taping parts should be minimized to ease the process of removing parts from the packaging.

All expendable packaging material must be legally and economically disposable at all Harley-Davidson locations regardless of the initial location using the packaging materials. Harley-



Doing Business With Harley-Davidson, Packaging Original Equipment Manufacturing and Assembly Operations Last Update: July 2015

Davidson highly recommends the use of recyclable packaging materials.

Expendable Packaging Closures:

- Tape should be used to secure the lid of a container. Paper-packaging tape that can be torn is preferred.
- Do not use polyester film reinforced with glass, rayon fiber combined with a laminate of paper, staples, and or glue closure to seal the container closed.

Packaging Safety and Ergonomics:

Safety and Ergonomics are a primary concern for Harley-Davidson in regards to the development of all packaging. When designing expendable packaging, Harley-Davidson suppliers must consider human interaction when designing packaging to ensure safety and prevent injuries both at Harley-Davidson and supplier facilities. Suppliers are highly encouraged to initiate ideas to improve the safety, quality, cost and efficiency of any existing product packaging.

Safety and Ergonomic Design Requirements:

- All manually handled packages must be equal to or less than 35 pounds.
- Expendable boxes that exceed 22 inches in height, including pallet, will require a drop panel to allow access to the parts. The drop panel must create an opening of 50 percent of the container wall height and 80 percent of the container-wall-width dimension.
- All containers and palletized loads must be stackable unless part configuration and weight requirements do not permit.
- Packaging and pallets must be in good repair and working condition prior to shipment to Harley-Davidson.

PALLETS

Harley-Davidson requires all suppliers to ship in on standard size pallets. Below are the specifications that need to be met to ship product to Harley-Davidson.

Pallet Materials:

- Wood, metal and plastics are acceptable materials as long as the pallet meets the criteria in this specification.
- Expendable corrugated pallets are not acceptable unless approved by a Harley-Davidson packaging engineer.

Harley-Davidson does not provide expendable pallets for supplier shipments.



Environmental Issues:

All international wood packaging shipments, including pallets must comply with USDA treatment and labeling standards. These standards can be obtained at: <http://ispm15.com/>

Pallet Dimensions (Length & Width) & Max Load Heights:

Pallet Dimensions

LENGTH (inches)	WIDTH (inches)	MAX HEIGHT (inches)
48	45	50
32	30	37.5
48	32	40

Pallet Capacity:

The loaded gross weight of a pallet load must not exceed 1200 lbs. unless otherwise approved by Harley-Davidson.

All pallets shipments need to withstand being double stacked during transportation. Shipments need to be double stacked in trailers to maximize cube space and efficiency of transportation vehicles.

Pallet Style and Type:

- Pallets must be four-way entry notched stringer pallets.
- Pallets must be flush (no winged) reversible or nonreversible stringer pallets.
- For safety considerations block style pallets are not accepted.
- Pallet construction must meet the standards defined by the National Wooden Pallet/Container Association.

1800 North Kent Street Suite 911
Arlington, VA 22209-2104
(703) 527-7667
www.nwpca.com – General Website



Doing Business With Harley-Davidson, Packaging Original Equipment Manufacturing and Assembly Operations Last Update: July 2015

Pallet Loading:

- No overhang of boxes is allowed.
- Under hang is only allowed as long as 90% of the surface is utilized.
- All packages must be secured to prevent the load from shifting during transit.
- Plastic strapping is required on all shipments.
- Metal strapping/banding is not acceptable.
- Stretch film may be required to ensure the load does not shift during transit and should be used in addition to plastic strapping.

LABELING AND IDENTIFICATION

All Labeling information can be found on H-DSN under Doing Business with Harley-Davidson, Operations Process Information, Bar Coding Requirements. The link to this document is:
<http://www.h-dsn.com/genbus/PublicDocServlet?docID=450&docExt=pdf>

HAZARDOUS MATERIALS

Hazardous Materials:

All suppliers and/or shippers are responsible to comply with all applicable international, national, federal, provincial, state or local laws and regulations for packaging hazardous materials (*packing, marking, labeling, describing and certifying*).

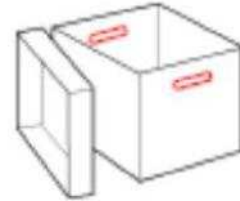
U.S. Federal regulations including [Hazardous Materials Regulations \(Title 49 CFR Parts 100-185\)](http://www.ecfr.gov/cgi-bin/retrieve.cfm?id=49) can be obtained at: <http://hazmat.dot.gov/regs/rules.htm>



CONTAINER EXAMPLES



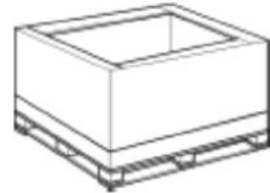
Returnable Hand Held



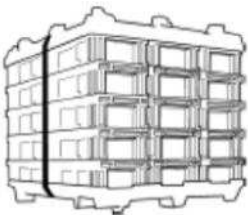
Expendable Hand Held



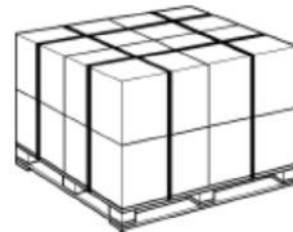
Returnable Bulk Bin



Expendable Bulk Bin



Returnable Palletized Load



Expendable Palletized Load