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1. Intention

The continuous improvement of the commercial processes is an important strategy of the HJS Fahrzeugtechnik – in the following called HJS. This is valid not only for our products, but also for the logistic methods of the material flow, the packaging, the transport and the material handling.

Aim of HJS is to reduce the handling in the material flow to a minimum, while the parts are passed on in the condition as delivered near the manufacturing arrangement.

To reach this, all packaging and transport methods must correspond to the definitions described in this regulation. HJS prefers, if possible, the delivery of standard parts in reusable packaging to reduce waste disposal and repacking costs and to avoid dirt by One-way packaging in the production.

The packaging standards of HJS are given to the supplier by this regulation.

The following regulations will help to ensure a rational and trouble-free material flow between suppliers and HJS with the help of

- Standardized dimensions
- Standardized identification
- Optimum container and packaging design
- Synchronized quantities within packaging.

The packaging regulation including all arrangements contains the valid packaging directives for suppliers of HJS. It is a component of the terms and conditions of purchasing which are to be seen under www.hjs.com.

2. Packaging requirements

- Damage-free delivery of parts (no impairment of quality)
- Handling-oriented design
- Optimum capacity utilization of the transportation units and loading devices
- Identification of the goods based on the specifications (chapter 3 "Identification of Goods")
- Identification of the packaging based on ISO 780
- Stacking capability
- Shipping protection
- Hassle-free unloading capability of the loading devices out of the transport vehicles with the help of industrial trucks
- Usage of recycling-capable transport packaging (disposable and reusable packaging)
- Avoidance and minimum usage of One-way packaging materials
- Clean condition of pallets, containers and packaging
The supplier sticks for qualitatively bad parts, as a result of from defective or dirty packaging.
- Manually handled units shall not exceed a gross weight of 15 kg
- Objects (e.g., pieces of paper, cords, coverings, ...), which exceed the outer contour of the outer packaging have to be removed before shipping.

2.1 Recycling of packaging and avoidance of waste

Packaging is to be planned basically under economic and ecological aspects.

The waste-economic objectives of the environmental legislation contain according to the ecological priorities:

- *Waste avoidance of packaging*
Packaging waste limit to the immediate necessary measure
- *Minimization of packaging*
Reusable- and one-way packaging is to be defined after ecological and economic points of view and only the necessary packaging should be used.
- *Packaging utilisation*
Reusable- and one-way packaging must allow an environment-friendly utilisation.

To do justice to the demands from the packaging order and to load the environment not needlessly, only environment-friendly materials are to be used. The usage of material to fill up Cartons should be reduced to a minimum,

2.2 Approved and not approved packaging materials

Material		Approved Materials	Not Approved Materials
Composites	General		Composites are not approved
General Plastics	Disposable	PE, PP have to be identified based on DIN 6120	PUR, EPS-Chips
	Reusable	ABS, PE, PP PP have to be identified based on DIN 6120	PVC only after explicit approval
Plastic Packing Material	Foams: Disposable Reusable	PE PE, PP	
	Shrink and stretch wrapping	Only PE with material identification based on DIN 6120	
	Pouches and sacks made of foil	<ul style="list-style-type: none"> • Only PE with material identification based on DIN 6120 • Stickers and adhesive tape made from the same materials 	
	Expanded polystyrene (Styrofoam)		only with explicit approval
Paper and Cardboard		<ul style="list-style-type: none"> • Has to be free of paper production damaging substances and has to be marked with the RESY symbol. • VCI papers that are proven to be recycled with paper / cardboard. These kind of papers have to be marked with the RESY symbol. 	Coatings or adhesives that are not water soluble (e.g. wax, paraffin, bitumen, and oil paper, adhesive paper tapes)
Strap	General	PP	<ul style="list-style-type: none"> • Polyamide straps • Polyester straps • Steel straps are only admitted with heavy loads and require the explicit approval
Wood	General	Based on IPPC Standard	<ul style="list-style-type: none"> • Particle boards • Impregnated, painted or laminated wood
Metal	Disposable Reusable	Only with special approval	only with explicit approval

2.3 Closing of packing material

Packing materials have to be designed and built, so that no additional closing means are needed. If a packing material has to be closed using additional packing material, the same material should be used and attention should be paid to the fact that the entire packaging can be recycled without problems.

2.4 Labelling hazardous material

Packaging of hazardous goods (e.g., flammable liquids, gasses, toxins, etc.) have to be clearly marked with the warning signs and handling instructions according to the legislative standards. Packaging also has to be suitable and approved for the hazardous material based on the current regulations. Material type, or material name, warning notes and handling instructions may not be covered up.

Parts of the statutory provisions are among other things positioning, size, colour, documentation, language and carrier of the identification.

The responsibility for meeting the requirements lies with the employer or proprietor of a company that ships, the hazardous material, packages the material for shipping or surrenders the material for transportation. These provisions do not apply to a party, who merely receives the hazardous material and transports it on the factory grounds.

It is mandatory to use warning symbols that are in accordance with the European or international laws and provisions when shipping hazardous materials. The appropriate documentation has to accompany the shipment. The shipping documents have to include the necessary declarations.

2.5 Standard dimensions

Packaging type	Max. length in mm	Max. width in mm	Max. height in mm
Disposable / small Shipments	≤ 600	≤ 400	≤ 420
Reusable	≤ 600	≤ 400	≤ 420
Pallet	≤ 1200	≤ 800 1000 (only with approval)	≤ 1000

Dimension other than the shown maximum dimensions are listed allowed only when an arrangement with HJS was concluded.

Manually handled packaging shall not exceed a gross weight of 15 kg and loading unities a maximum gross weight of 1500 kg.

2.6 Packing planning

Before the series delivery by the supplier, the packaging must always be agreed with HJS; the following procedure is specified for this purpose:

- The Purchasing department sends the packaging data sheet to the supplier (see attachment)
- The supplier has to prepare a packaging proposal based on the requirements specified in this specification
- The correspondingly filled packing data sheet will be returned to HJS by the supplier and checked by the Supply Chain Management department
- Once the packaging has been determined, changes should only be made in consultation with HJS

2.7 Ony-way packing

Avoid One-way packaging whenever possible. Exceptions have to be coordinated in any case with the receiving plant.

One-way packaging is generally provided by the supplier and has to meet the following requirements:

- Damage-free, hassle-free handling with industrial trucks
- Stacking capability (for pallet goods), min. 2-fold
- Identification of the max. load or stacking factor
- Environment-friendly disposal

Disposable pallets have to meet the quality requirements of the material flow. The individual components have to be secured when creating unit loads, so that they can not slip. Parcels or other material may not protrude over the unit load. Provision 94/62/EG for Packaging and Packaging Waste applies when One-way packaging is used, a provision that was implemented nationally in the individual EC countries. According to this provision, manufacturers and distributors have to take back transport packaging after it was used and make sure that it is re-used or recycled.

2.8 Reusable packaging

The supplier is responsible for the obtaining reusable packaging, which is agreed with HJS in the approach, according to the packing planning 2.6. The delivery in KLT can only be made by suppliers, who can deliver themselves and thus take back empties.

For the change or new planning of a packaging the following neutral KLT can be considered:

Description	Colour	Dimensions LxWxH	LT-No.
RL-KLT 3147	blau / RAL5005	297 x 198 x 147,5 mm	73
RL-KLT 4147	blau / RAL5005	396 x 297 x 147,5 mm	25
RL-KLT 6147	blau / RAL5005	594 x 396 x 147,5 mm	23
RL-KLT 6280	blau / RAL5005	594 x 396 x 280 mm	24
Euro- Gitterboxpalette	grau	1240 x 835 x 966 mm	2
Europalette		1200 x 800 mm	4

The meeting costs / responsibility for cost issue generally (also freight, insurance, shrinkage, repair, ...) has to be resolved with the purchase department. This applies to new packaging definitions as well as changes, especially if it affects the price (part price or costs for material and/or handling).

If the specified packaging requirements are not met, HJS reserves the right to charge the particular supplier with the arising handling, disposal and re-packaging costs.

The HJS packaging number of the reusable packaging (LT-No.) and the quantity is to be listed on the bill of delivery.

2.9 Supplier-owned packaging

The supplier can use his own containers or reusable packaging. This supplier-owned packaging has to be presented before the contract is completed and approved by HJS.

2.10 Control and management of reusable packaging

2.10.1 General information

The reusable packaging WIP between HJS and the suppliers will be held in accounts. For each supplier and for each used reusable packaging a separate account will be set up. The supplier has to create and manage appropriate accounts. When prompted, he must present the transaction data to HJS. The supplier has to ensure that all outflows and inflows are booked in this account.

2.10.2. Control of reusable packaging

The control of reusable packaging requires accurate data, based on delivered goods. The supplier has to indicate the type, quantity and HJS-part number on the delivery note. The HJS- carrier part numbers are shown in this packaging specification.

If the goods are delivered in reusable packaging, the packaging is exchanged directly in accordance with the delivered quantities. Either with the supplier (KLT, DB-Europallet, Eurogitterboxen, etc.) or the forwarder (DB-Europallet, Eurogitterboxen). It can only be exchanged boxes with valid EPAL badge and Europallets with EUR and EPAL branding according to general specification of the "Gütergemeinschaft Paletten" (<http://www.gpal.de/>). If the charge carrier does not meet the specification, they are disposed of.

2.10.3 Procurement

Reusable packaging is generally purchased by the supplier. Deviations from this must be agreed with HJS.

2.10.4 Damaged carrier

HJS examine the state of the outgoing and incoming carrier and reserves for the delivery of damaged, incorrect or improperly loaded carrier to charge the supplier with repacking. If the supplier delivers a damaged Euro Gitterbox (drop-side mesh pallet) without consultation, the supplier has to bear the repair and the return cost. Not exchangeable pallets (e.g. euro-pallet) be treated as non returnable pallets. A damaged KLT is to sort out, if the functional capability of the KLT, the protection of the products and the viability of the KLT is not guaranteed. This is particularly the case in stabilizing and sustaining damage to elements of the KLT (e.g. corners and sidewalls). Furthermore a KLT is considered damaged when its use can lead to injury (accident prevention, job safety).

2.10.5 Reconciliation

The supplier has to do a monthly reconciliation with HJS. For this purpose, the supplier receives the transaction data of the HJS account and compares them with the transaction data of his account. The outstanding reusable packaging is also take into account. Within five working days of receipt of the data, the data must be confirmed. If there is no response from the supplier, the data will be enshrined in the HJS account and are considered acceptable by the supplier.

2.11 Cleaning

In order to achieve a smooth manufacturing process, it is necessary to obtain clean vendor parts in clean containers. Thus each supplier is obliged to keep the means of transport clean and clean them if necessary. Any adherent parts (e.g., old labels, adhesive tapes, ...) have to be removed.

2.12 ESD packaging and labelling of electronic components

All electronic components have to be protected with an ESD bag (each) and all shock-sensitive electronic components have to be protected with an ESD bubble wrap. Electrostatic sensitive parts have to be marked with an ESD label.

2.12.1 ESD Label



2.12.2 Marking of electronic components

Each electronic component has to be marked with an ESD label on the bag or the bubble wrap. Components that are programmed after installation, are excluded.

Following contents have to be written on the label:

- supplier number
- HJS article number (with barcode)
- revision status
- manufacture date
- batch number

2.13 Packing of board material

When packaging board material, the supplier must ensure that the material is always delivered "laser-suitable". This essentially means:

- The pallet must correspond to the dimensions of the board material (usually 2500x1250mm)
- The structure of the pallet must ensure the flatness of the board material throughout, even when transported by a fork lift truck
- The pallet must be designed in a way that it can be transported by a fork lift truck
- The board material must be delivered sorted on a pallet
- The total weight of a pallet must not exceed 1500 kg
- The packaging must prevent damage, especially scratching
- Documentation has to be attached to the delivery of the material

3. Identification of goods

A fast and smoothly registration in incoming inspection requires reliable and unambiguous identification of goods. Incorrect, ambiguous or missing identification leads to significant interference and costs within the process. HJS reserves the right to charge the party who caused the damage with the resulting expenses.

3.1 Identification according to VDA 4902 or VDA 4994








Each loading unit, container and parcel has to be labelled with the VDA 4902 or 4994 transport label. In particular must be guaranteed that the information on the transport label agrees with the contents of the package and small load carrier. All labels and test notes of the supplier have to be removed of the container and devaluated well obviously.

Two formats are available for the labelling, according to the packaging:

- Format 210 mm x 148 mm
- Format 210 mm x 74 mm (VDA-KLT-Label).

The format 210 x 148 is used as a transport label for GLT (mesh box pallet, closed plastic container...) or as a collective transport label per loading unit. The transport label KLT format 210 x 74 is used for KLT or cardboards.

3.1.1 Sample VDA transport label (not in original size)

(1) Warenempfänger Fa. Muster KG 00000 Musterstadt	(2) Abladestelle - Lagerort - Verwendungsschlüssel 384 T	(3) Lieferschein-Nr. (74) 12345678 
(8) Sach-Nr. Kunde (P) 	A 123 456 7890	
(9) Füllmenge (3) 1 000 St. 	(10) Bezeichnung, Lieferung, Leistung Elektr. Steuergerät	
(12) Lieferanten-Nr. (V) 123 45678 	(11) Sach-Nr. Lieferant (305) 987654321 B 	
(15) Packstück-Nr. (S) 9876543 21 	(13) Datum D 960126	(14) Änderungsstand Konstruktion D 940801
	(16) Chargen-Nr. (H) C 123456 	

(1) Warenempfänger Fa. Muster KG 00000 Musterstadt		(2) Abladestelle – Lagerort – Verwendungsschlüssel 384 T		
(3) Lieferschein-Nr. (N) 12345678 		(4) Lieferantenschrift (Kurzname, Werk, PLZ Ort) A. Absender, Werk, 11111 Lieferstadt		
		(5) Gewicht Netto 34 kg	(6) Gewicht Brutto 158 kg	(7) Anzahl Packstücke 3
(8) Sach-Nr. Kunde (P) A 123 456 7890 				
(9) Füllmenge (C) 1 000 St. 		(10) Bezeichnung, Lieferung, Leistung Elektr. Steuergerät		
		(11) Sach-Nr. Lieferant (305) 987654321 B 		
(12) Lieferanten-Nr. (V) 123 45678 		(13) Datum D 960126		
		(14) Änderungsstand Konstruktion D 940801		
(15) Packstück-Nr. (S) 9876543 21 		(16) Chargen-Nr. (F) C 123456 		
<small>(17) A. Absender GmbH & Co. KG, 11111 Lieferstadt</small>		<small>Warenanhänger VDA 4902, Version 4</small>		

3.1.2 Explanation of the VDA transport label

The following field contents are important for the material flow at HJS

Field No.	Field name / data element	Remarks	Man-datory	Bar-code
1	Receiver	Name and location of receiver	YES	NO
2	Dock-Gate	Location where the goods have to be unloaded at the customer plant	NO	NO
3	Delivery note number	Delivery note number	YES	YES
4	Supplier address	Name, plant, postal code and town of supplier	YES	NO
5	Net weight	Net weight of packaging unit w/o packaging to which the label belongs [kg]	YES	NO
6	Gross weight	Gross weight of packaging unit including packaging to which the label belongs [kg]	YES	NO
7	No. of Boxes	Number of delivered packaging units per delivery note or delivery	YES	NO
8	Part No. Customer	Part number given by HJS	YES	YES
9	Quantity	Quantity of the part per packaging unit	YES	YES

10	Description	Description of the delivery (e.g. part description)	YES	NO
11	Supplier Part No.	Supplier part number	NO	NO
12	Supplier-No.	Supplier no. given by HJS	YES	YES
13	Date	Production date (P_JJ.MM.DD)	YES	YES
14	Engr. Change	Engineering change number for this part, given by HJS	YES	NO
15	Serial No.	Unique number per packaging unit from the supplier.	NO	NO
16	Batch No.	Batch number of the supplier.	YES	YES
17	Postal address long	Postal address of the customer	NO	NO


3.2. Delivery Note

When delivering materials, the supplier must ensure that the accompanying delivery note contains at least the HJS article number and the corresponding HJS order number and is available in duplicate.

List of abbreviations

ABS	Acrylnitril-Butadien-Styrol
DIN	German Standardization Institute
EPS	Expanded polystyrene
GLT	Großladungsträger (large load carriers)
IPPC	International Plant Protection Convention
KLT	Kleinladungsträger (small load carriers)
PE	Polyethylene
PP	Polypropylene
PVC	Polyvinyl chloride
VCI	Volatile Corrosion Inhibitor
VDA	German Association of the Automotive Industry
WIP	work in process
ESD	electrostatic discharge

Packaging specification sheet

	Packaging Specification Sheet		HJS Formblatt
			C4-FB-09
			Ausgabe: 26-04-2010
Product Data			
HJS-Part-No.:		Supplier Part-No.:	
Description:		Net weight (kg):	
Supplier Data			
Supplier-No.:		Postal Code, Location:	
Supplier Name:			
Contact Person:			
Telephone-No.:			
Fax-No.:			
Email-Adress:			
	Load Carrier (LC)	Loading Unit (LU)	
On-way/Re-usable:			
HJS-Ident-No.:			
Description (e.g. GIBO, EU-Palett, KLT):			
Measure [LxWxH] (full):			
Parts per full LC/LU [unit]:			
LC quantity per layer:			
Gross weight LC/LU [kg]:			
possible to store outside:			
Stackability full LC/LU 1+:			
Owner of LC/LU:			
<u>Comment:</u> e.g.: cover the mesh box pallet with cardboard, procedure with empties			
Picture of a full load carrier and a full loading unit			
Date:	Name:		

Accompanying documents

Document-No.	Title
94/62/EG	Packaging and packaging waste
EN ISO 780	Packaging - Pictorial marking for handling of goods
VDA 4902	Transport label
VDA 4994	Small load carriers
VDA 4500	Small load carriers
	Spezifikation Europalette (EUR/EPAL)
	Qualitätsbeurteilung beim Tausch von EUR Boxpaletten (EUR/EPAL)